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## How to Properly Load a Flight Plan and a Flight

This is possibly the most misunderstood area of Microsoft Flight Simulators, and frankly it's no wonder, because Microsoft incorporated an extremely complex methodology in their design. You'll note that the caption reads 'Load a **Flight Plan** and a **Flight**'. I made this distinction because there are two completely different principal components that comprise a flight. Let's break these down.

The two main files are:

**The Flight Plan File (.PLN)**  
**The Flight File (.FLT)**

**It's Your Plane (IYP)** needs **BOTH** of these files in order to operate properly.

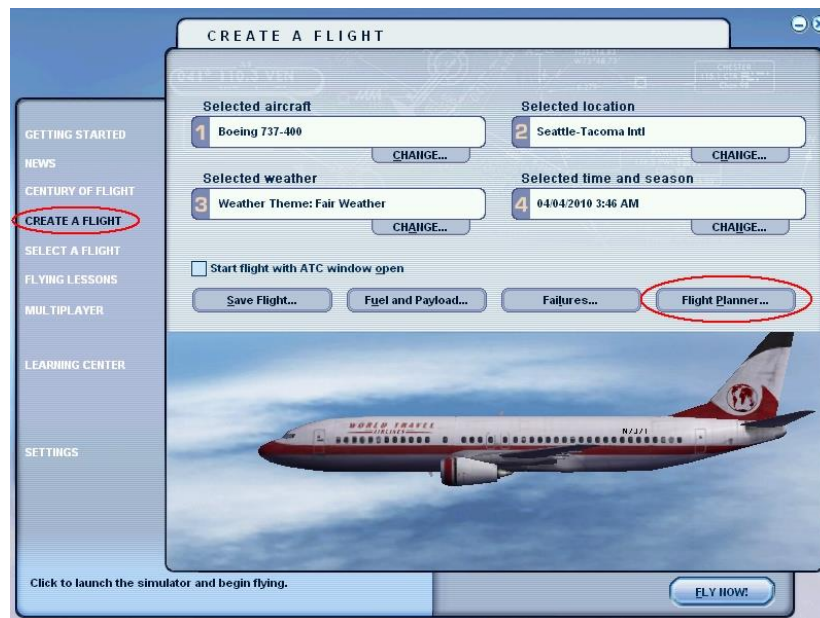
### FS9 Example:

There are basically three ways of establishing a **Flight Plan** within the simulator...

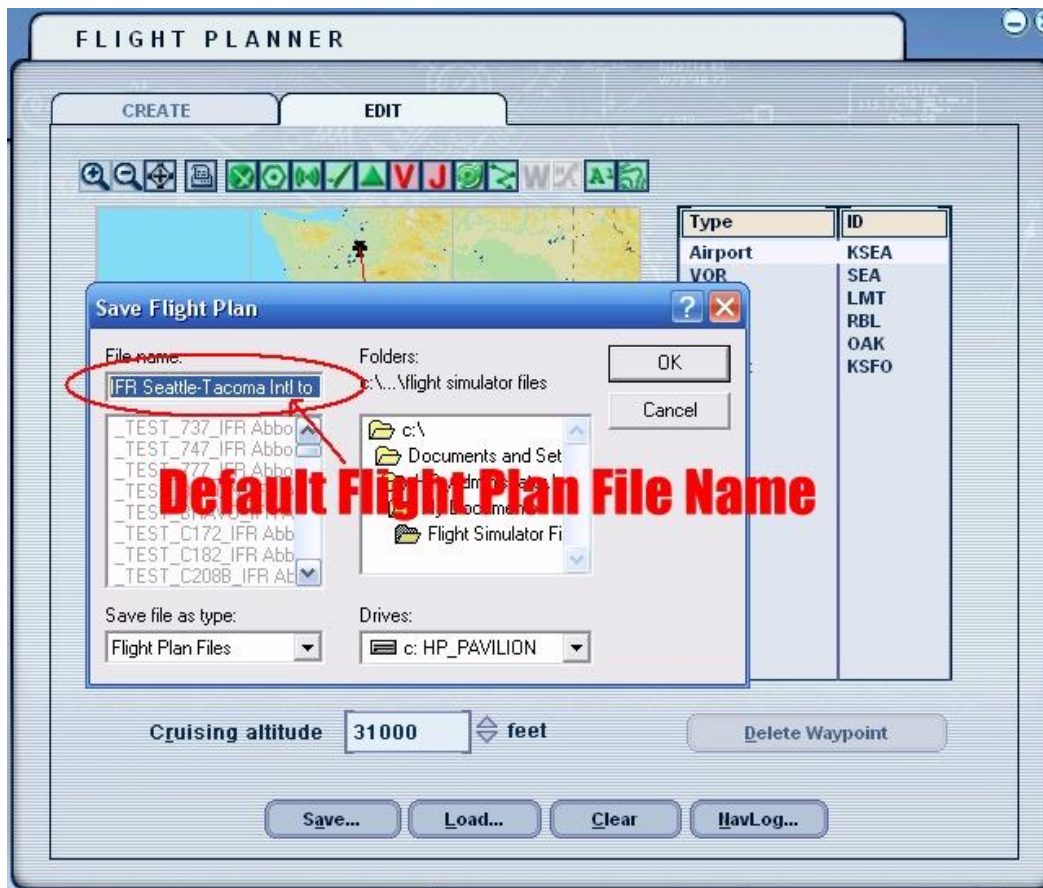
- 1) **Create a Flight Plan during the 'Create a New Flight' stage**
- 2) **Create a Flight Plan after the aircraft is loaded**
- 3) **Load a previously created Flight Plan**

#### 1. Create a Flight Plan during the 'Create a New Flight' stage:

Here's an example. You launch **FS9**, click on **CREATE A FLIGHT**, select a **Boeing 737** aircraft, select the **Weather**, set the **Season, Date and Time**, then click on the **Flight Planner** button.



When you click on **Flight Planner**, a new window pops up where you create a **Flight Plan** (in this example) from Seattle to San Francisco.



You define the **Origination** (departure) and **Destination** airports (in this case Seattle-Tacoma and San Francisco respectively), select **IFR** and **High-altitude airways**, create the **Route** by clicking on the **Find Route** button, and then by choosing to use the default simulator file names, you create a file called:

**IFR Seattle-Tacoma Intl to San Francisco Intl.PLN**

When you click on the **OK** button on an **XP** operating system, the **Flight Plan** file is stored in your documents area... e.g.,

**C:\Documents and Settings\  
[USERNAME]\  
My Documents\  
Flight Simulator Files\  
IFR Seattle-Tacoma Intl to San Francisco Intl.PLN**

When you click on the **OK** button on a **Vista** or **Windows 7** operating system, the **Flight Plan** file is stored in your documents area... e.g.,

**C:\Users\  
[USERNAME]\  
Documents\  
Flight Simulator Files\  
IFR Seattle-Tacoma Intl to San Francisco Intl.PLN**

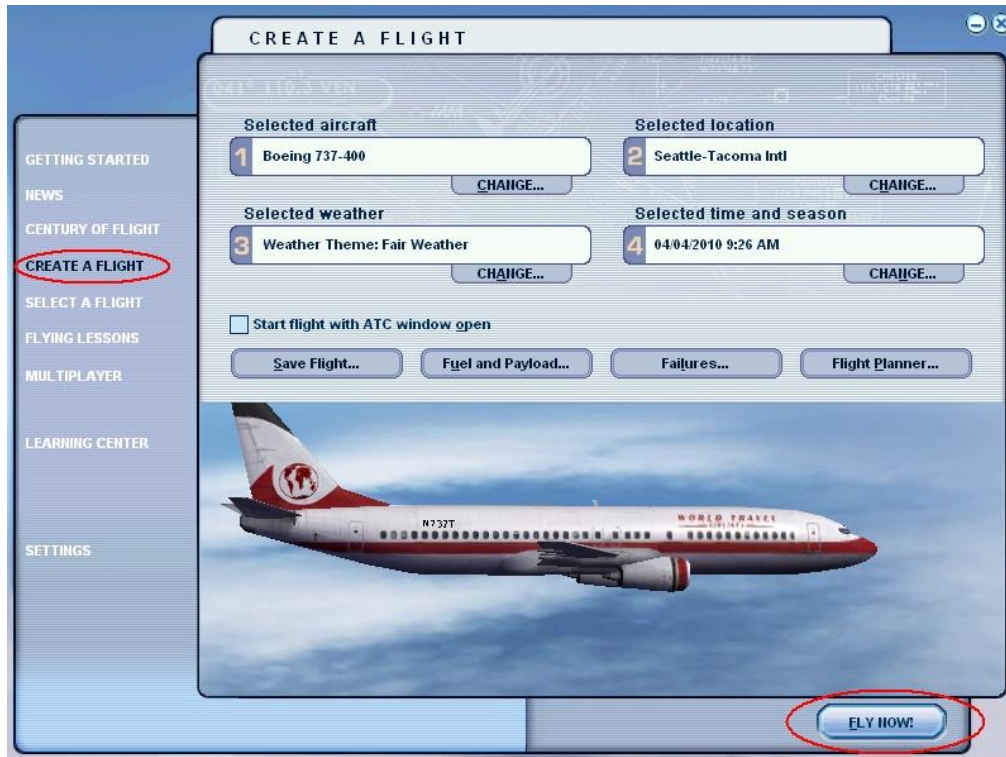
**Note the file extension .PLN**

You then click **Fly Now**.

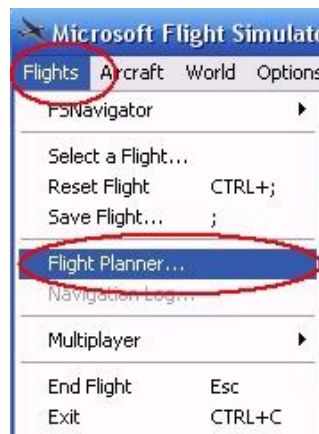
You bring up your **GPS**, and there's your **Flight Plan**.

## 2. Create a Flight Plan after the aircraft is loaded

In this case you launch **FS9**, click on **CREATE A FLIGHT**, select a **Boeing 737** aircraft, set the **Weather**, set the **Time and Season**, and then click on the **Fly Now** button.



Once the aircraft is loaded, you select **Flights** > **Flight Planner** on the **FS9** menu...



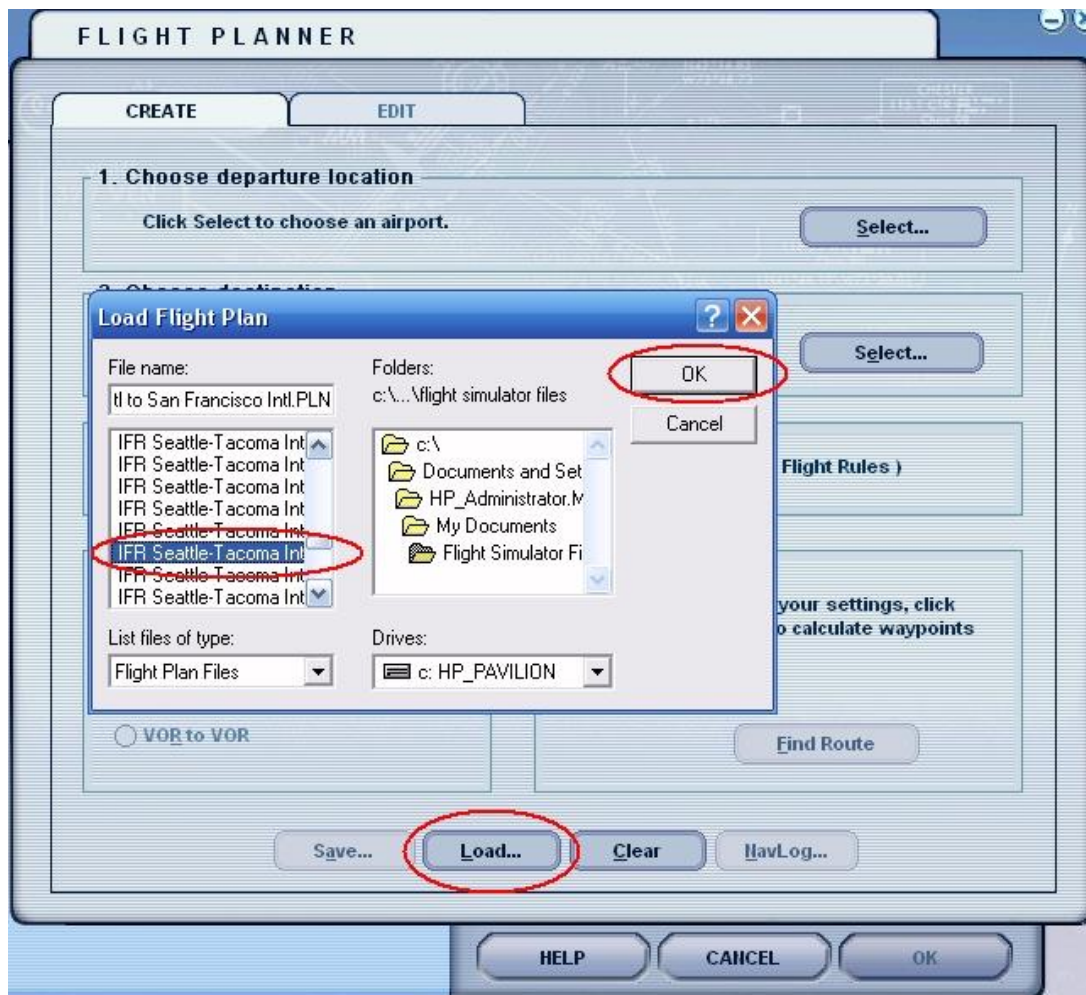
Once again, using our example, when you click on the **Flight Planner**, a new window pops up where you create a **Flight Plan** from Seattle to San Francisco. You bring up your **GPS**, and sure enough, there's your **Flight Plan**.



### 3. Load a previously created Flight Plan

In this example, you basically repeat the same steps as detailed in the first example above. You launch **FS9**, click on **CREATE A FLIGHT**, select a **Boeing 737** aircraft, select the **Weather**, set the **Season**, **Date and Time** then click on the **Flight Planner**.

However, in this case you click on the **Load...** button. The Flight Planner window pops up and you select a previously created **Flight Plan** from the drop down list then press **OK**.



You then click on **Fly Now**.

You bring up your **GPS**, and once again, there's your **Flight Plan**.



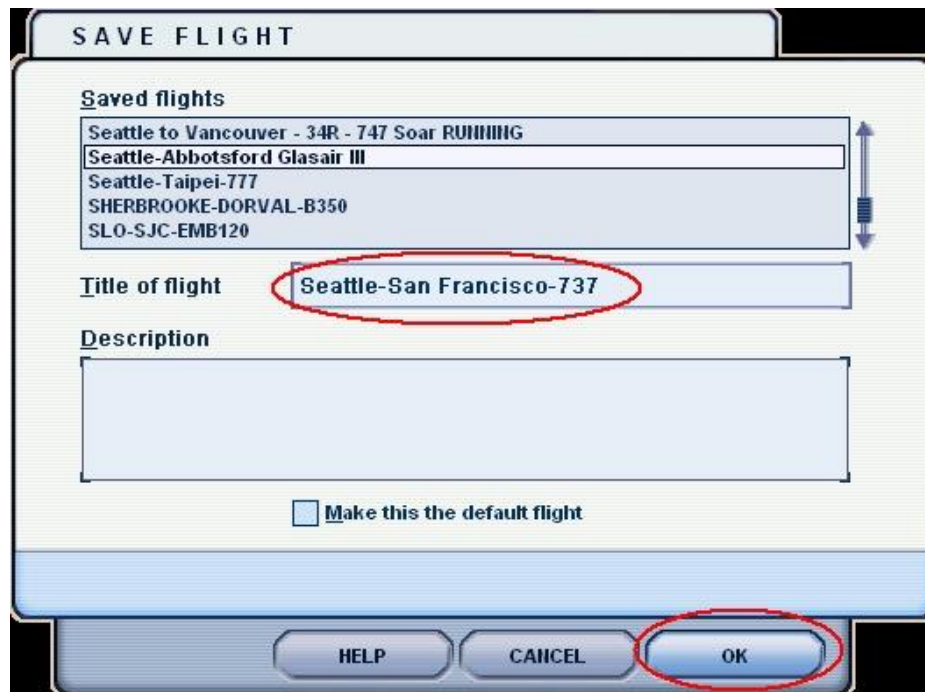
Using any of the foregoing examples installs a Flight Plan into the simulator... but NOT a Flight.

## Create Your Flight File

You now need to **Save** and **Select** your **Flight**. To do this, click on **Flights** on the main menu bar of the simulator, and select **Save Flight**.



Create a name for your **Flight**... e.g., **Seattle-San Francisco-737** then press **OK**.



After clicking the **OK** button, the **Flight** file is stored in your documents area on an **XP** operating system... e.g.

**C:\Documents and Settings\  
[USERNAME]\  
My Documents\  
Flight Simulator Files\  
Seattle-San Francisco-737.FLT**

On a Vista or Windows 7 operating system, the file is stored here:

**C:\Users\  
[USERNAME]\  
Documents\  
Flight Simulator Files\  
Seattle-San Francisco-737.FLT**

**Note the file extension .FLT**

## Select Your Flight File

Now that you have **Saved** the **Flight** file, you need to **Select** it. To do this, click on **Flights** on the main menu bar of the simulator, and click on **Select a Flight...**



Select your previously saved file: **Seattle-San Francisco-737.FLT**.

You're ready to go!

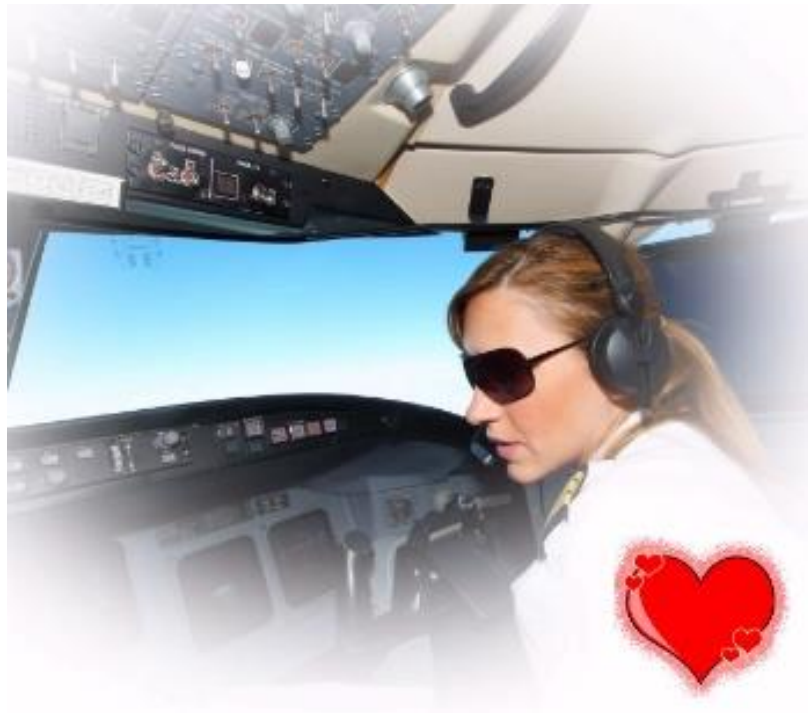
## Flying a Previously Created Flight

If you decide that you wish to fly the Seattle to San Francisco Boeing 737 flight again at some point in the future, you simply **launch FS9**, click on **SELECT A FLIGHT**, under **Choose a Category** select **My Saved Flights**, then under **Choose a Flight**, select your previously saved flight named:

**Seattle-San Francisco-737.FLT**

You're ready to go!

**If you follow the foregoing procedures, Michelle will love you!**



## FSX Example:

There are basically three ways of establishing a **Flight Plan** within the simulator...

- 1) **Create a Flight Plan during the 'Create a New Flight' stage**
- 2) **Create a Flight Plan after the aircraft is loaded**
- 3) **Load an previously created Flight Plan**

### 1. Create a Flight Plan during the create a new flight stage:

Here's an example. You launch **FSX**, click on **FREE FLIGHT**, select a **Boeing 737** aircraft, select the **Weather**, set the **Season, Date and Time** and then click on the **Flight Planner**.



When you click on the **Flight Planner**, a new window pops up where you create a **Flight Plan** (in this example) from Seattle to San Francisco. You define the **Origination** (departure) and **Destination** airports (in this case Seattle-Tacoma and San Francisco respectively), select **IFR** and **High-altitude airways**, create the **Route** by clicking on the **Find Route** button, and then, by choosing to use the default simulator file names, you will create a file called:

**IFR Seattle-Tacoma Intl to San Francisco Intl.PLN**

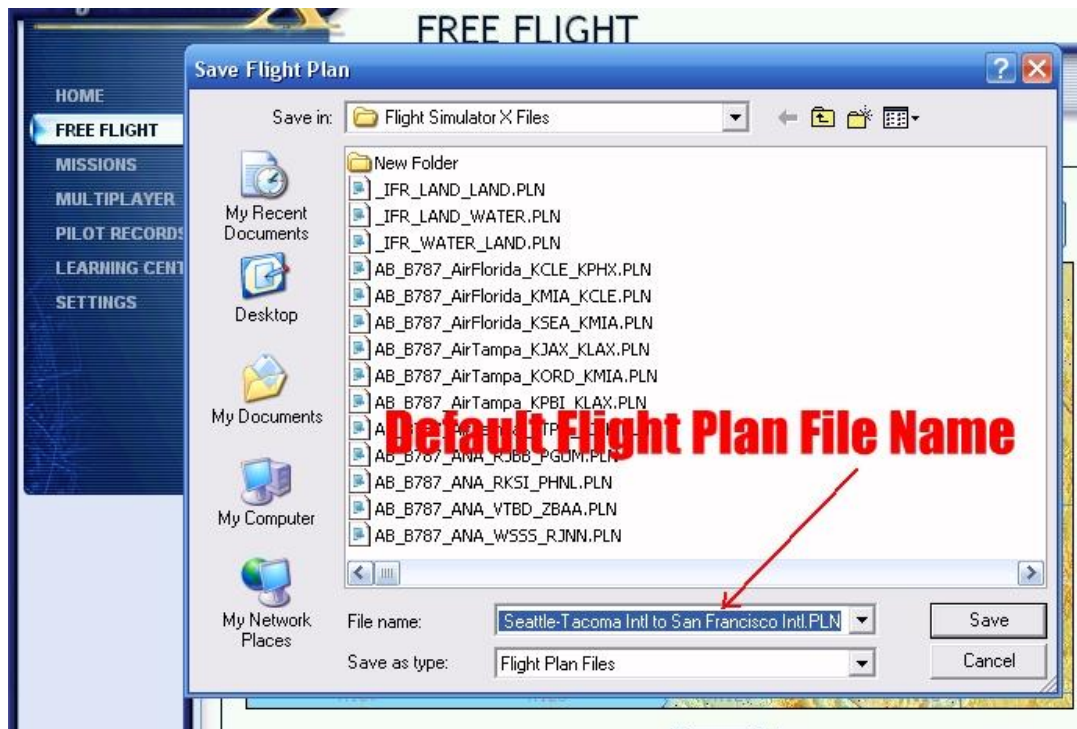
When you click on the **OK** button, on a **XP** operating system, the **Flight Plan** file is stored in your documents area... e.g.,

**C:\ Documents and Settings\  
[USERNAME]\  
My Documents\  
Flight Simulator X Files\  
IFR Seattle-Tacoma Intl to San Francisco Intl.PLN**

When you click on the **OK** button on a **Vista** or **Windows 7** operating system, the **Flight Plan** file is stored in your documents area... e.g.,

**C:\Users\  
[USERNAME]\  
Documents\  
Flight Simulator X Files\  
IFR Seattle-Tacoma Intl to San Francisco Intl.PLN**

**Note the file extension .PLN**



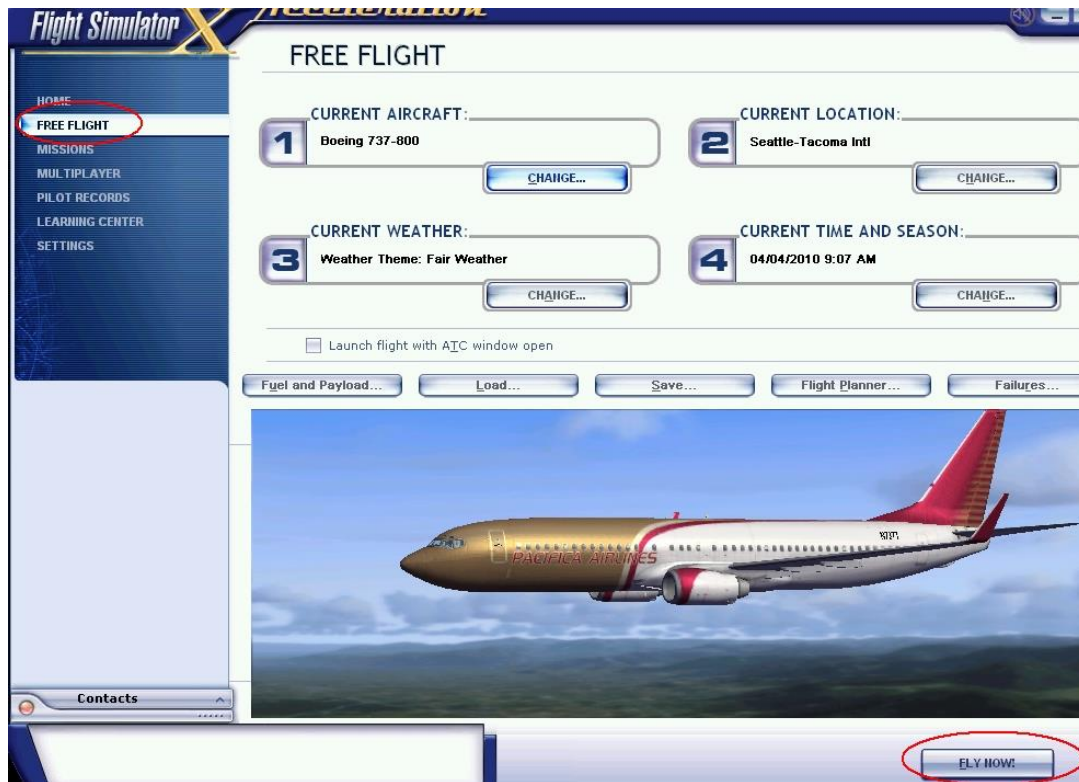
You then click **Fly Now**.

You bring up your **GPS**, and there's your **Flight Plan**.

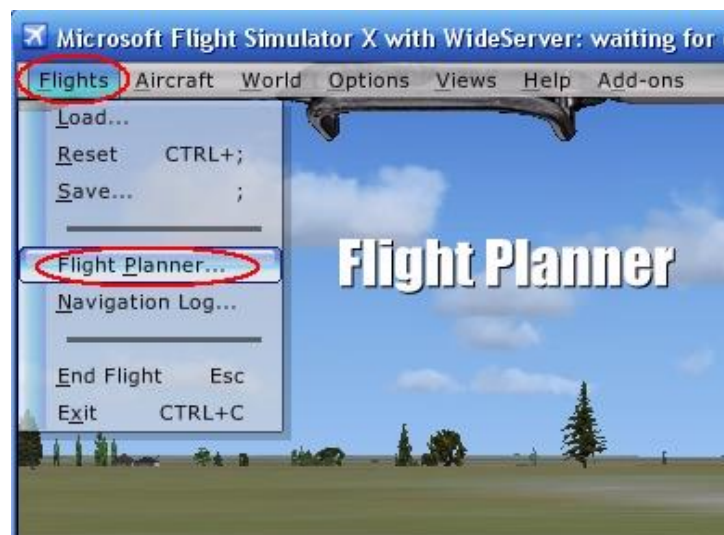


## 2. Create a Flight Plan after the aircraft is loaded

In this case you launch **FSX**, click on **FREE FLIGHT**, select a **Boeing 737** aircraft, set the **Weather**, set the **Time and Season**, and then click on **Fly Now**.



Once the aircraft is loaded, you select **Flights** > **Flight Planner** on the **FSX** menu...

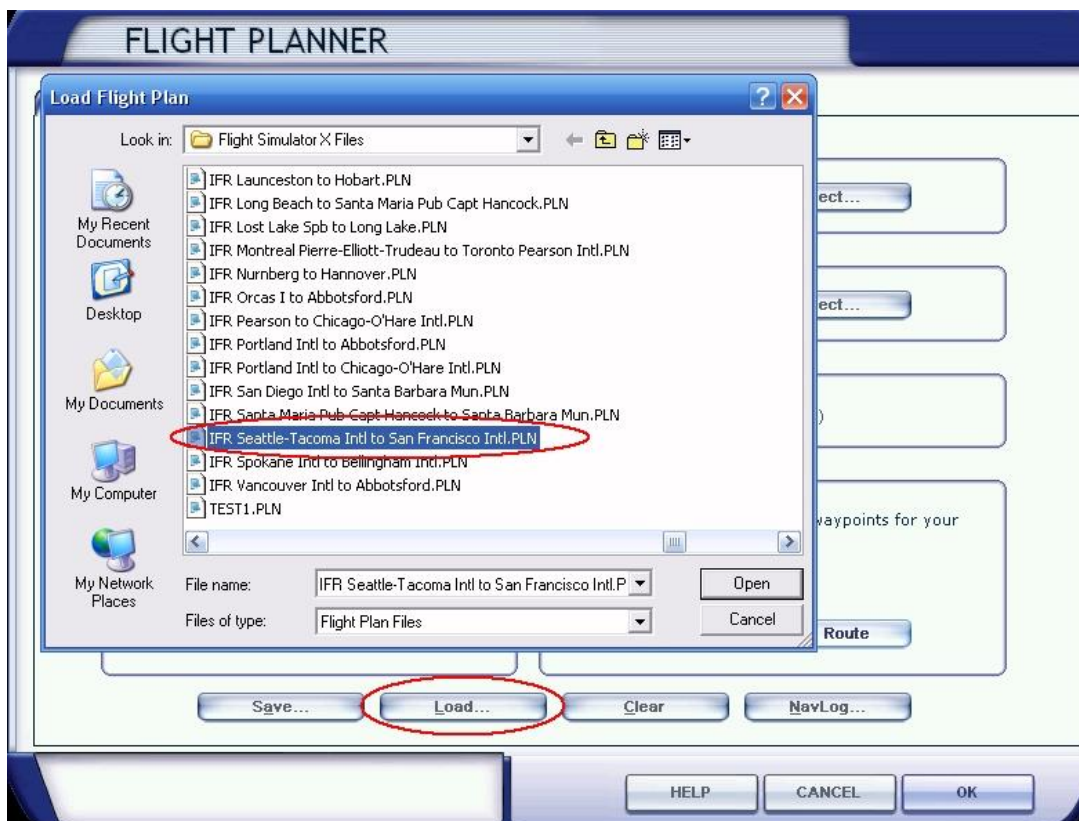


Once again, using our example, when you click on the **Flight Planner**, a new window pops up where you create a **Flight Plan** from Seattle to San Francisco. You bring up your **GPS**, and sure enough, there's your **Flight Plan**.

### 3. Load a previously created Flight Plan

In this example, you basically repeat the same steps as detailed in the first example above. You launch **FSX**, click on **FREE FLIGHT**, select a **Boeing 737** aircraft, select the **Weather**, set the **Season, Date and Time** and then click on the **Flight Planner**.

However, in this case you click on the **Load...** button. The **Flight Planner** window pops up and you select a previously created **Flight Plan** from the drop down list then press **OK**.



You then click on **Fly Now**.

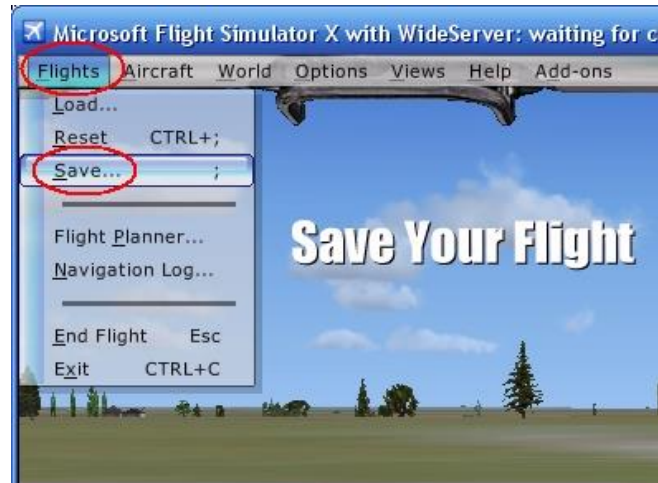
Once again, you bring up your **GPS**, and sure enough, there's your **Flight Plan**.



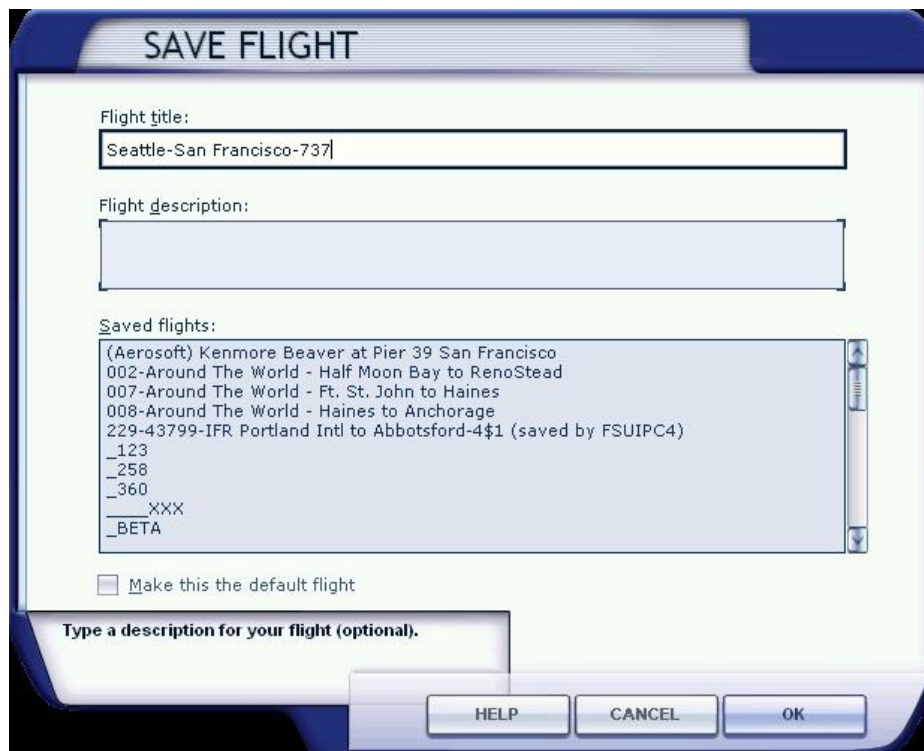
Using any of the foregoing examples installs a Flight Plan into the simulator... but NOT a Flight.

## Create Your Flight File

You now need to **Save** and **Select** your **Flight**. To do this, click on **Flights** on the main menu bar of the simulator, and select **Save**.



Create a name for your **Flight**... e.g., **Seattle-San Francisco-737** then press **OK**.



After clicking the **OK** button, the **Flight** file is stored in your documents area... e.g.

**C:\Users\  
[USERNAME]\  
Documents\  
Flight Simulator X Files\  
Seattle-San Francisco-737.FLT**

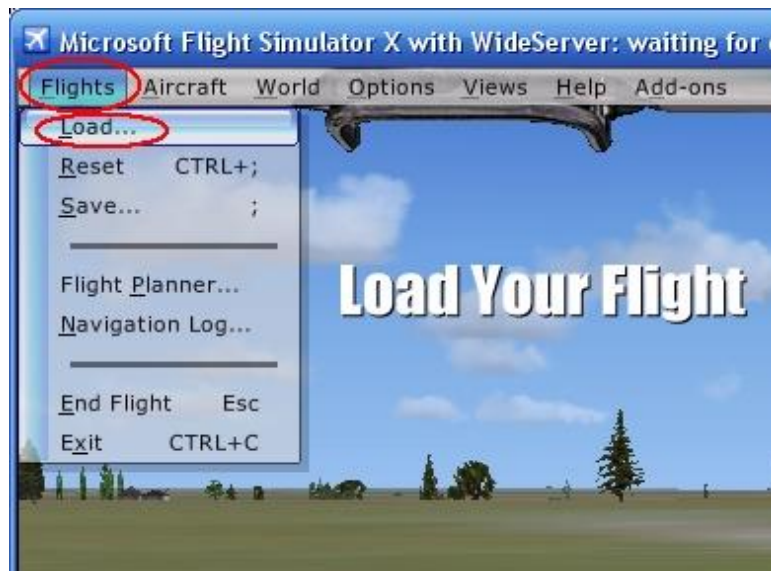
When you click on the **OK** button on a **Vista** or **Windows 7** operating system, the **Flight Plan** file is stored in your documents area... e.g.,

**C:\Users\  
[USERNAME]\  
Documents\  
Flight Simulator X Files\  
Seattle-San Francisco-737.FLT**

**Note the file extension .FLT**

## Load Your Flight File

Now that you have **Saved** the **Flight** file, you need to **Load** it. To do this, click on **Flights** on the main menu bar of the simulator, and click on **Load...**



Select your previously saved file: **Seattle-San Francisco-737.FLT**.

You're ready to go!

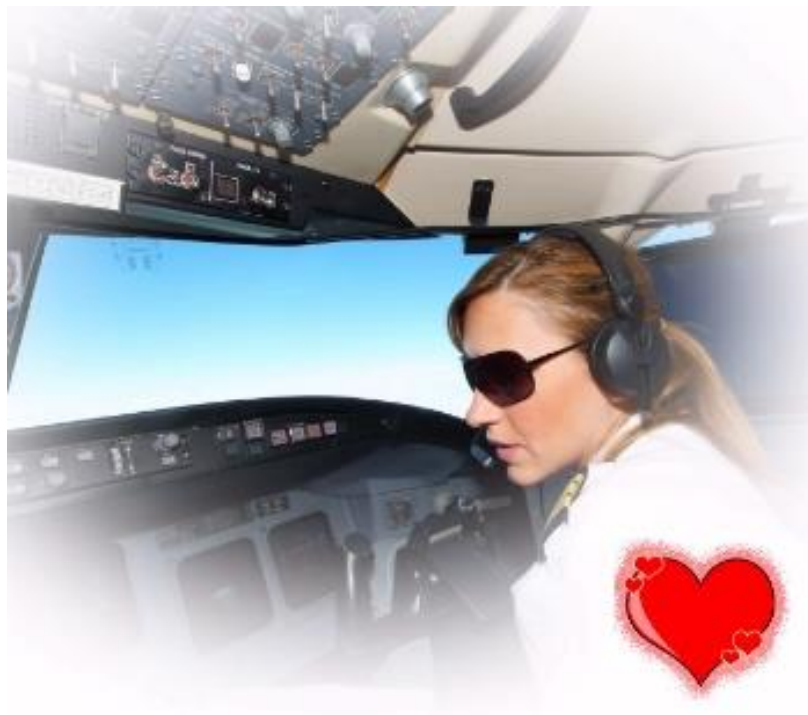
## Flying a Previously Created Flight

If you decide that you wish to fly the Seattle to San Francisco Boeing 737 flight again at some point in the future, you simply **launch FSX**, click on **FREE FLIGHT**, under **Title** select your previously saved flight named:

**Seattle-San Francisco-737.FLT**

You're ready to go!

**If you follow the foregoing procedures, Michelle will love you!**



## Is My Flight Properly Set Up?

There's a sure-fire way to know that you have your flight and flight plan properly loaded before you takeoff. Simply say...

### ***"Bring up the ACARS window"***

Ensure that **ALL** of the required fields are loaded with the correct data. For example:

#### **REQUISITE INFORMATION**

All of the requisite data must be present before ACARS logging will start. Namely:

- **Airline** - Will display It's Your Plane - PRIVATE unless flying with a VA
- **IATA** - Will display IYP unless flying with a Virtual Airline
- **Registration** - Actual Tail (Registration) Number of the aircraft being flown
- **Select Call** - A 4-character Selective Calling Code that is randomly generated by IYP
- **Call Sign** - Is derived from the Flight Number of the aircraft being flown
- **Pilot #** - The IYP User's Number, unless the pilot is flying with a VA (more later)
- **Dept ICAO** - The departure airport ICAO pulled from the Flight Plan
- **Dest ICAO** - The destination airport ICAO pulled from the Flight Plan
- **Altitude** - The planned Flight Level pulled from the Flight Plan
- **Aircraft** - An IYP formulated 4-character code for the aircraft being flown
- **Route** - pulled from the Flight Plan (unless Project Magenta then FMC)

Here's what your ACARS window should look like if you are flying as an It's Your Plane user (i.e., not associated with a Virtual Airline)

When you finished verifying the information, simply say...

### ***"Kill the ACARS window"***

## MyMusic Sub-Folders

IYP Pilot Number 13934 posted the following request on the IYP Forum:

*"I really like the My Music feature - I can listen to my music on long flights. Would it be possible for us to create play lists so we can have selections play instead of the whole list? It would be nice to be able to tell Michelle to "Play My Music List xxxx"."*

Before this addition, one would simply say, "My Music On" or "My Music Off" to turn on and off the playback of personal MP3 music, which you have stored in the MyMusic folder, under the simulator's sound folder.

### **[Simulator Root Folder]\Sound\MyMusic\**

As of the release of IYP Version 4.1.0.181 you can add 10 sub-folders under the MyMusic folder... namely 0 through 9:



Name	Size	Type	Artist
0		File Folder	
1		File Folder	
2		File Folder	
4		File Folder	
V313Ought To Be.mp3	4,241 KB	MP3 Format Sound	Robert Cezar
V401-Walking Alone.mp3	3,355 KB	MP3 Format Sound	Robert Cezar

Referring to the above image, the 2 files named:

**V313Ought To Be.mp3**  
**V401-Walking Alone.mp3**

will still be played by saying... "My Music On" as it always has. However, now you can say... "Play My Music 0", "Play My Music 1"... "Play My Music 9", to play the MP3 files located in their respective folders; 0 through 9.

Thanks Brett.

## Approaching a Destination Airport with ILS

In answer to the question...

***"When do I execute the Approach and Landing checklists?"***

It depends to a great extent on the aircraft you are flying. Typically with General Aviation type aircraft (e.g. a Cessna C172, Baron 58, etc.) you would call for the checklists about 18 miles out. In the case of jetliners, turboprops, etc., you would do this at approximately 22 miles out, in order to give the plane ample time to slow down.



### Making an ILS Approach

Referring to the image above, you can see that we are approaching the ILS equipped Runway 27 at the Victoria International airport (CYYJ) in British Columbia, Canada. The length of the arrow shown on the GPS is 6 nautical miles. Let's double this length to 12 miles and imagine this point in space (the green dot) as your **Entry Point**.

#### Define the Airport:

Ensure that you have given Michelle the **ICAO** for the destination airport; if you have a properly loaded **Flight Plan**, she will already know this. However, you can always say (using our example), "Make the destination airport Charlie, Yankee, Yankee, Juliet". Michelle will respond with, "Roger. Charlie, Yankee, Yankee, Juliet. Distance 43 miles. Airport altitude, 63 feet. The airport name is Victoria".



**Load the ILS Approach Frequency:**

Let's assume that ATC has assigned ILS Approach Runway 27 for landing. During your descent to the destination airport, you should say to Michelle, *"Load the ILS Approach frequency for runway two seven"*. She'll respond with, *"Navigation one set to the approach frequency of 108.7 for runway 27. I've set the course to 266"*.

**Call For the Approach and Landing Checklists:**

In this example, we are flying a heading of **300 degrees** towards the **Entry Point** in a jetliner, so when Michelle reports, *"22 miles – 11 o'clock"*, that's the time to say, *"Approach and Landing checklists"*. In this example, when Michelle asks, *"Do you want me to assist you?"* you'd reply in the affirmative.

**NOTE:** Michelle only reports the distance to the destination airport if you have previously executed the Descent checklist.

Following the above procedures will afford Michelle a sufficient amount of time to: detect the Localiser and say, *"The Localiser's alive"*; find the Glideslope and say, *"The glideslope's alive"*; and then as the aircraft intersects the Localiser, say, *"Switching to ILS Approach mode"*, followed by, *"Locked on the Localiser"*, and finally, *"I've set the heading to the runway heading."* The aircraft will have time to slow down sufficiently so that Michelle can properly lower the flaps and gear, capture the Glideslope, etc.

**IMPORTANT NOTE:** If you attempt to execute the Approach and Landing checklists when you are too close to the airport, Michelle will not have time to perform her duties and will not even have time to detect the Localiser and/or the Glideslope. If you're too close, go around.

**Auto-Landing Activated**

If you have activated the IYP Auto-Landing feature, and if the aircraft supports Auto-Landing (see Supported Aircraft on the IYP website), then as the aircraft drops below 1,000 feet AAL, Michelle will say, *"Captain. I'll handle the landing. It's my plane."*

**Auto-Landing Deactivated**

If you have deactivated the IYP Auto-Landing feature, then as the aircraft drops below 1,000 feet AAL, Michelle will say, *"Captain. You'll be doing the landing. It's your plane."*

**Making an ILS Back Course Approach**

Performing an ILS Back Course approach is pretty much the same as a normal ILS approach, with a few exceptions. In this example, let's assume that we're flying into Bellingham International airport (KBLI) in Bellingham, Washington, and ATC has assigned us Runway 34 for landing. At Bellingham, the ILS Approach is Runway 16; Runway 34 is the **Back Course** approach. This means that Runway 34 has the same Localiser frequency as Runway 16, except that left is right, and right is left. In real life, some ILS Back Course approaches have a Glideslope called a "Localizer Back Course with Glide Slope". However, I've never found one in the Microsoft simulator.

**Load the ILS Approach Frequency:**

As you're descending towards the Bellingham airport, you'd say to Michelle, *"Load the ILS Approach frequency for runway three four"*. She'll respond with, *"The chosen*



runway does not have an ILS Approach. However, Navigation one is set to the back course frequency of 108.5 for runway 34. I've set the course to 340°.

Once again, take the length of the arrow on Runway 16 (shown on the GPS), double its length to represent about 12 miles, and imagine a point in space (the green dot) as your **Entry Point**.



As you approach the intersection of the Localiser, Michelle will say, "Captain. I recommend that you turn off the Altitude Hold when we turn onto final, so that you can manually control the rate of descent."

Michelle will detect the Localiser and say, "The Localiser's alive" and then as the aircraft intersects the Localiser, she will say, "Switching to Back Course Approach mode", followed by, "Locked on the Localiser", and finally, "I've set the heading to the runway heading."

At this point, you would switch off the Altitude Hold and, since Michelle is maintaining a near constant rate of speed, you can control the rate of descent by tweaking the elevator trim. Keep your eyes riveted on the Visual Approach Slope Indicator (VASI)... those red and white lights. Remember... too red, you're dead; too white, have a nice flight; red and white, you're doing alright!

The following link is a great resource for an in-depth description of ILS Approaches...

<http://stoenworks.com/Tutorials/ILS Back-Course Approaches.html>

## Transition Altitudes

### Takeoff and Climbout:

As you know, the built-in Microsoft ATC system only supports a single Transition Level of 18,000 feet anywhere in the world. When using either the Radar Contact 4 or LiveATC modes, the IYP system respects the "real" Transition Altitudes on a worldwide basis. For example, when departing Heathrow airport, the Transition Altitude is Flight Level 060 (FL060, or 6,000 feet).

### Takeoff and Climbout within North America:

When flying in North America where the Transition Altitude is FL180 (18,000 feet), when using SimpleATC, SuperATC or Radar Contact, the IYP code works precisely as it has always worked in previous versions. That is to say, Michelle sets the altimeter to 29.92 as the aircraft climbs above 18,000 feet, and states,

*"Captain... I have adjusted the altimeter".*

Michelle used to then ask,

*"Would you like me to maintain an optimized airspeed throughout the flight?"*

### **THIS IS NO LONGER THE CASE EFFECTIVE IYP VERSION 4.1.0.181**

(See **Jet Aircraft Airspeeds** below for more details)

### Takeoff and Climbout Outside North America:

When flying outside North America in either SimpleATC or SuperATC modes, where the Transition Altitude is still considered to be FL180 (18,000 feet), Michelle sets the altimeter to 29.92 as the aircraft climbs above 18,000 feet, and states,

*"Captain... I have adjusted the altimeter".*

In the Radar Contact mode outside North America, Michelle sets the altimeter to 1013 MILLIBARS (same as 29.92 mercury) as the aircraft climbs above the Transition Altitude for that area of the world, and states, *"Captain... QNH has been reset"...* which is synonymous with saying, *"Captain... I have adjusted the altimeter"*. Other than that exception, everything remains the same as when flying in North America.

### Descent:

On the way down, Michelle says, *"Don't forget to check the altimeter as we drop below the transition level"*. **NOTE: Michelle does NOT adjust the altimeter setting automatically unless Auto-Altimeter is ON.**

ATC provides you with the current barometric pressure and you (the Captain) ask Michelle to set it as needed by saying, *"Altimeter xx.xx"*.

### Descent with Radar Contact or LiveATC:

Upon executing the Descent Checklist, Michelle will provide you with the Transition Altitude for the destination airport. Other than that exception, everything remains the same as when flying in North America.

## Alternate Radar Contact Settings

In some instances, the regular IYP settings for the key depressions that control the Radar Contact Menu (RC) system may conflict with other third-party applications, in particular when using Radar Contact on a Client PC in a WideFS environment. By default, the NUMERIC selections within the RC Menu system are a combination of:

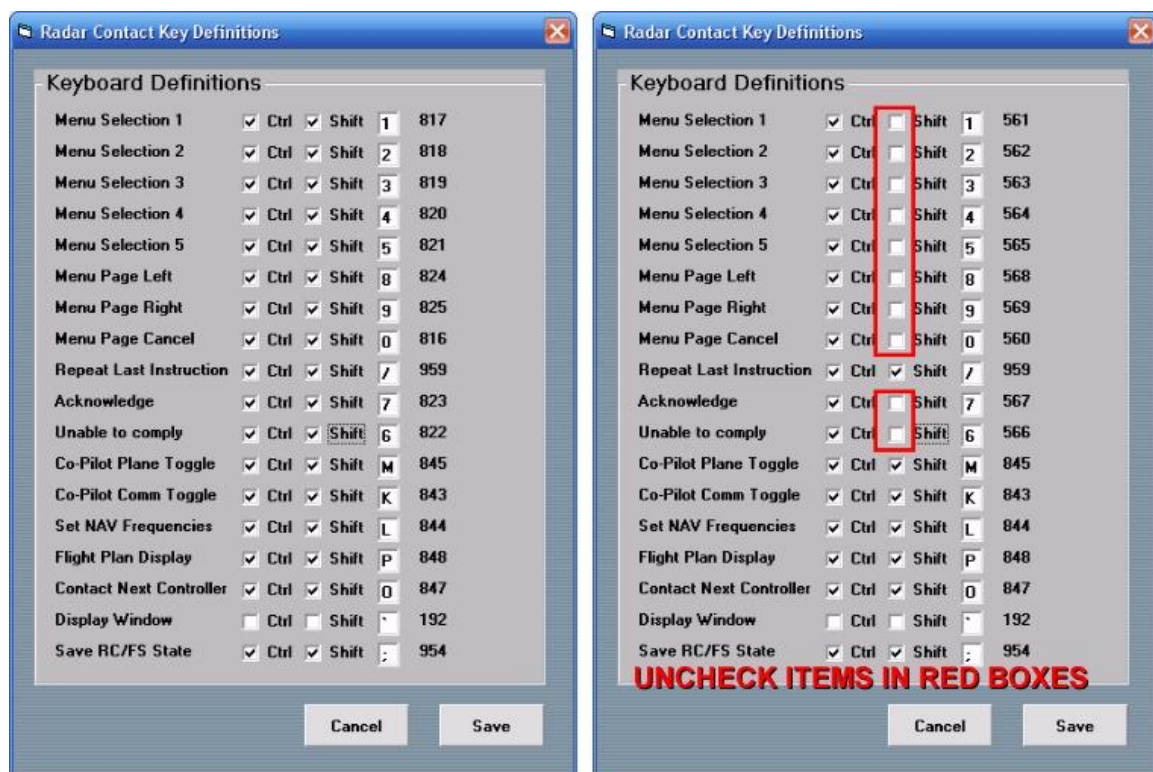
**CTRL + SHIFT + <KEY 0-9>**

By saying the phrase, "Use Alternate R C commands", the IYP system will change the above default settings to:

**CTRL + <KEY 0-9>**

By saying the phrase, "Use regular R C commands", the IYP system will change the key depressions back to the default settings.

Default settings are displayed to the left; the alternate settings to the right.



## LiveATC Mode

As of revision 4.1.0.187, we have added a new selection called **LiveATC** in the ATC mode selector on the IYP Control panel to accommodate Vatsim, IVAO, etc.



This feature was required in order to permit the selection of the live ATC mode within the ACARS system.



When the LiveATC mode is selected, the live ATC provider (FPI, IVAO, Vatsim) can be selected in the ATC window of the ACARS system.

**NOTE:** The default selection is Vatsim.

**NOTE:** When a selection is made, it is "remembered" between IYP sessions.

## It's Your Plane – It's My Plane

As of IYP revision 4.1.0.187, the phrases ***"It's Your Plane"*** and ***"It's My Plane"*** have been added in order to pass control to, and take control from Michelle during takeoff and landing respectively.

### Overview

Let's say you're approaching the destination airport, and you say to Michelle, about 20 miles out...

***"Approach checklist"***

She responds with...

***"Roger. We'll do the approach and landing checklists"***

She then asks...

***"Do you want me to assist you?"***

If you answer in the **affirmative**, Michelle will begin running through the checklist items, and then take control of the actual landing procedures; like lowering the flaps and gear, calling out altitudes on the way down, and even auto-land the aircraft if that mode has been selected.

If, however, on approach you wish to take control but keep the checklist sequence in place, you can now say...

***"It's My Plane"***

At this point Michelle will still call out aspects of the approach, along with altitudes on the way down, but she'll no longer operate the controls, because... It's Your Plane!

Alternatively, had you declined by saying, "No thanks", when Michelle asked...

***"Do you want me to assist you?"***

then you are in control. However, on the way in, you can pass control back to Michelle and have her handle the controls by merely saying...

***"It's Your Plane"***

I hope this is clear!



## I Don't Have a Scroll Lock Key

You've just unpacked your new PC and you want to use IYP **Push-To-Talk** feature, however, after looking everywhere, you discover that your keyboard doesn't have a **Scroll Lock** key! Now what?

If you're running **Vista** or **Windows 7**, type the phrase:

**OSK**

in the **Start Search** area. This little screen will pop up:



So there... you have a **Scroll Lock** key after all.

More details here:

<http://www.microsoft.com/windowsxp/using/setup/learnmore/tips/boutillier1.msp>

# Calculating Fuel Consumption

What I've put together here is a way to calculate the approximate amount of fuel you will burn on a given flight, with a given aircraft. Before we get started, please keep in mind that while this method produces relatively good approximations, it is certainly no where near as accurate as the elaborate calculations real pilots use in computing fuel consumption for real flights.

## Flight Plan and Flight

You need to have your flight plan and flight properly loaded before setting the fuel consumption values. If you require assistance in setting up your flight plan and flight information, please refer to the section above entitled:

### How to Properly Load a Flight Plan and a Flight

at the top of this document.

## Select the Aircraft

You need to have the designated aircraft defined BEFORE performing these calculations. i.e., don't calculate the fuel burn for a 737-400, then change the aircraft to a 747-400... everything will be wrong!

## Using an Example

In order to best explain the process, let's say we're going to be flying a Boeing 777-300 from Boston (KBOS) to Montreal (CYUL) at 30,000 feet (Flight Level 300).

Bring up your Navigation Log (ALT F N) and up at the top of the page it will show the estimated fuel burn. In this example, let's say the Estimated Fuel Burn displays 9936 pounds.

## Taxiing, Ground Holds, and Climb Out

Keep in mind that the above simulator estimation of 9936 pounds doesn't take into account the fuel that will be burned during taxi, on ground holds or climb out. So, let's add 15% to the simulator's number, giving us 11426 pounds ( $9936 * 1.15$ ).

## Weather, Holding Patterns, Go-Arounds and Diversions

Also, the simulator's estimation doesn't figure fuel reserves for Weather, Holding Patterns, Go-Arounds, or Diversions. So let's add an extra 10% to our 11426 pounds, giving us approximately 12569 pounds ( $11426 * 1.1$ ). This minuscule amount represents only 4.3% of the Boeing 777's fuel capacity.

## Tanks

Keeping fuel in the wings is important because it reduces the mechanical stress between the wings and the rest of the airframe by putting a significant portion of the weight to be lifted in the wings themselves. An aircraft with a tank in each wing and one tank in the centre will usually fill the wing tanks first and only use the centre tank if needed to carry the full fuel load. It will then burn the fuel in the centre tank first during flight, only switching to wing tanks when the centre tank is nearly empty. But many aircraft have more than just two or three tanks, and then it gets more complicated.



**Summary**

This is just a basic guide on how to plan your fuel. It's up to you to efficiently use that fuel i.e. using proper climb/decent rates, speeds, step climbs and all the other factors that come into play with fuel use.

## FSX Fuel Calculations Cannot be Performed

You may have elected to install your FSX simulator in a non-standard configuration, which can result in restricting access to certain files necessary for Michelle to compute fuel consumption. In these cases, you need to create a small text file that will provide the path to these files.

Typically, navigation logs files are located in your Documents area... e.g.

**C:\Users\Robert\Documents\Flight Simulator X Files\**

or the UNC equivalent, as in:

**\\Roberts-pc\Users\Robert\Documents\Flight Simulator X Files\**

The IYP application uses the **ROOT** above, namely:

**C:\Users\Robert\**

or the UNC equivalent, as in:

**\\Roberts-pc\Users\**

in order to build a path to the **FSX Navigation** Log file, as in:

**C:\Users\Robert\AppData\Roaming\Microsoft\FSX\**

or the UNC equivalent, as in:

**\\Roberts-pc\Users\Robert\AppData\Roaming\Microsoft\FSX\**

If you elected to save your flights in a customized folder, e.g.:

**\\Roberts-pc\fsx files\**

the IYP system will be unable to develop the proper **ROOT** information.

In this case, you will need to create a text file called:

**navlogpath.txt**

in the **ROOT FOLDER** of your **FSX** simulator. The file must contain the complete UNC type PATH to the Navigation Log file location. e.g.:

**\\Roberts-pc\Users\Robert\AppData\Roaming\Microsoft\FSX\**

If you have any problems creating this file, please contact me directly at:

[Robert@RobertCezar.com](mailto:Robert@RobertCezar.com)

**NOTE:** In **WideFS** installations the **navlogpath.txt** file is to be installed on the **CLIENT** PC.

## Call Sign Alteration

**NOTE:** The following is only relevant to the SuperATC mode of ATC communications.

**NOTE:** This feature has been added as of IYP Version 4.1.0.208

### Background:

Before the addition of this feature, the It's Your Plane (IYP) application constructed the aircraft's **Call Sign** by concatenating the aircraft manufacturer's aircraft assignment, and the aircraft's Tail (Registration) number. For example:

**Aircraft manufacturer assignment = Cessna**  
**Tail (Registration) number = N176CM**

comprising an IYP Call Sign of:

***"Cessna November One Seven Six Charlie Mike"***

Using the above example, the use of the simulator's default aircraft manufacturer's aircraft assignment of "Cessna", falls short of truly identifying the aircraft and its capabilities.

### Question:

***"Is the aircraft a C172 Skyhawk, or a more powerful C182 Skylane?"***

In addressing the foregoing, there are existing programmes that permit you to actually modify the simulator's ATC vocabulary and have ATC identify your aircraft as a "Skyhawk". i.e., the Microsoft ATC will address your aircraft as (e.g.),

***"Skyhawk November One Seven Six Charlie Mike"***

However, despite the changes to the Microsoft ATC language, the IYP programme still used the same method when constructing the Call Sign.

### Using this Feature:

Use this feature to customise your aircraft's Call Sign, by adding a single line entry into the aircraft's configuration file (**aircraft.cfg**) located in the aircraft's folder.

For example, in the Microsoft Flight Simulator 2004 (FS9), the Cessna C172 aircraft's configuration file can typically be found here:

```
[DRIVE]:\
Program Files\
Microsoft Games\
Flight Simulator 9\
Aircraft\
c172\
aircraft.cfg
```

in the Microsoft Flight Simulator 10 (FSX), the Cessna C172 aircraft's configuration file can typically be found here:

```
[DRIVE]:\  
Program Files\  
Microsoft Games\  
Microsoft Flight Simulator X\  
SimObjects\  
Airplanes\  
C172\  
aircraft.cfg
```

Open this file using **NOTEPAD**, and locate the existing entry entitled:

**[General]**

Below the aforementioned entry, you will typically see the following:

```
[General]  
atc_type=Cessna  
atc_model=C172
```

Let's assume that you already have the aircraft's Tail (Registration) Number set to N176CM in the simulator's **Aircraft Name** area, and you want to have **SuperATC** recognise your **Call Sign** as:

***"Skyhawk November One Seven Six Charlie Mike"***

Add the following entry (displayed in **RED** below) to the aircraft.cfg file:

```
[General]  
atc_type=Cessna  
atc_model=C172  
iyp_atc=Skyhawk
```

Save your aircraft.cfg file, and close NOTEPAD.

**NOTE:** The use of the iyp\_atc term Skyhawk will be used by SuperATC when constructing your Call Sign for **ALL** variations of the aircraft in this config.cfg file. i.e., if you have another aircraft with the Tail Number N700MS, then your SuperATC Call Sign will be:

***"Skyhawk November Seven Zero Zero Mike Sierra"***

Have fun!

# Turn-Arounds and Continuing Flights

## Overview (aka the Set Up)

Let's say you're the Captain piloting **Pacifica, Flight Number 1123**, (Call Sign Pacifica 1123) and you've just arrived at Vancouver International airport (CYVR) from Seattle's SEATAC airport (KSEA). After touch-down, you've contacted Vancouver Ground and they've assigned you a gate number. Your trusty Co-Pilot works with you to execute the Taxi-to-the-Gate checklist, and upon reaching the gate, you call for the Parking checklist. After executing the Parking checklist with your Co-Pilot, the doors open, and after waiting a few minutes, you'll note by the lack of cabin chatter that all the passengers have disembarked. The APU (Auxiliary Power Unit) is still running, the Cabin Music is still playing, the Navigation lights are still on, etc.

## What is a Turn-Around?

It's now time to pick up some new passengers in Vancouver and return the aircraft to Seattle International airport, as (for example) **Pacifica, Flight Number 1124**.

## What is a Continuing Flight?

It's now time to pick up some new passengers in Vancouver and continue on to (for example) Calgary International airport (CYYC). You may be retaining the Call Sign **Pacifica 1123**, or you may have a different Call Sign like, **Pacifica 1125**.

## Microsoft ATC Constraints

Along with many other inherent constraints, the built-in Microsoft ATC facilities were never designed to allow for the performing of Turn-Arounds and/or Continuing Flights for commercial aircraft. The procedures that follow can be used to "cheat" the Microsoft ATC system into permitting Turn-Arounds and/or Continuing Flights.

## What are Commercial Flights?

Commercial flights are defined as those where the aircraft being flown has an assigned **Flight Number**.

## Setting up your Flight Number (Call Sign)

In **FS2004 (FS9)** you do the following:

1. From the simulator's Main menu bar, click on Aircraft (ALT+A)
2. Click on Select Aircraft (ALT+A)
3. Click on Change (ALT+C)
4. Select Flight Number (ALT+F)
5. Enter your Flight Number (e.g. 1123)
6. Click OK
7. Click OK

In **FSX** you do the following:

1. From the simulator's Main menu bar, click on Aircraft (ALT+A)
2. Click on Select Aircraft (ALT+A)
3. Click on Details (ALT+D)
4. Select Flight Number (ALT+F)

5. Enter your Flight Number (e.g. 1123)
6. Click OK
7. Click OK

**NOTE: The procedures described herein will only work with commercial aircraft that possess a Flight Number as defined above.**

**NOTE: Although we have used passenger planes in the examples above, the same logic applies to Cargo aircraft with Flight Numbers.**

## Executing a Turn-Around

There are four basic things we have to do to accomplish a Turn-Around flight:

- **Reset ATC**
- **Load a Flight Plan**
- **Assign a Flight Number**
- **Prepare the Aircraft**

### Reset ATC

After parking at the gate, you'll note that the Microsoft ATC system has you stuck in the arrival mode. In order to obtain IFR clearance back to Seattle, we need to reset the Microsoft ATC system so that we can contact Vancouver Clearance Delivery. We do not want to change the aircraft's position in Vancouver; we will be departing on the return flight from the same gate. However, in order to reset the ATC system we need to **change something!**

#### Do the following:

1. From the simulator's Main menu bar, click on World (ALT+W)
2. Click on Map (ALT+M)
3. Select Airspeed (ALT+S)
4. Make a small alteration to the airspeed (e.g., 0 to 1, 2 to 1, etc)
5. Click OK

You'll note that upon clicking OK, the simulator will re-load and the ATC system will be reset back to a basic VFR mode. Next, we need to...

### Load a Flight Plan

We now need to either create and load a return Flight Plan (e.g. an IFR flight plan from CYVR to KSEA), or load an existing Flight Plan.

#### Create a Flight Plan

To create a return IFR Flight Plan from Vancouver to Seattle, do the following:

- From the simulator's Main menu bar, click on Flights (ALT+F)
- Select Flight Planner (ALT+P)
- Choose departure location (ALT+S)
- Select Country/Region (ALT+C)
- Press the HOME key to select Any
- Select Airport ID (ALT+I)
- Enter CYVR
- Press the ENTER key
- Choose destination (ALT+E)

- Select Airport ID (ALT+I)
- Enter KSEA
- Press the ENTER key
- Select Instrument Flight Rules (ALT+I)
- Select High altitude airways (ALT+H)
- Select Find Route (ALT+F)
- Select Cruising Altitude (ALT+R)
- Enter 15000 feet

**NOTE:** If your magnetic course is 180 to 359 degrees, use even thousands of feet, e.g. 14000 feet, 16000 feet, Flight Level 180, Flight Level 200, etc. If your magnetic course is 0 to 179 degrees, use odd thousands of feet, e.g. 15000 feet, 17000 feet, Flight Level 190, Flight Level 210, etc.

- Select Save (ALT+A)

**NOTE:** The Microsoft simulator will assign the default name of the Flight Plan as:

**IFR Vancouver Intl to Seattle-Tacoma Intl.PLN**

- In FSX Press Save (ALT+S) - in FS9 select OK
- Press OK

A Pop-Up window will appear asking the following:

**Do you want Flight Simulator to move your aircraft to the departure airport listed on the flight plan?**

- Select **No** (ALT+N)

**IMPORTANT:**

It is important that you answer "**No**" to the pop-up question otherwise your aircraft will automatically be moved away from your existing gate by the simulator.

**Load an Existing Flight Plan**

If you have previously created and saved an IFR Flight Plan from Vancouver (CYVR) to Seattle (KSEA), then do the following:

- From the simulator's Main menu bar, click on Flights (ALT+F)
- Select Flight Planner (ALT+P)
- Select Load (ALT+L)
- Select your existing Flight Plan  
(e.g. IFR Vancouver Intl to Seattle-Tacoma Intl.PLN)
- Press Open
- Press OK

A Pop-Up window will appear asking the following:

**Do you want Flight Simulator to move your aircraft to the departure airport listed on the flight plan?**

- Select **No** (ALT+N)



**IMPORTANT:**

It is important that you answer **"No"** to the pop-up question otherwise your aircraft will automatically be moved away from your existing gate by the simulator.

After creating and loading, or simply loading an existing Flight Plan, you'll note that you can now access Ground operations to obtain IFR Clearance to Seattle on the Microsoft ATC menu.

**Assign a Flight Number**

Please refer to the section entitled:

**Setting up your Flight Number (Call Sign)**

on PAGE 35 to set the Flight Number for the return leg. In this example, we'll use **Pacifica Flight Number 1124**.

**Prepare the Aircraft**

Say to Michelle/Mike,

***"Prepare aircraft for Turn-Around."***

This will automatically swap the origination and destination airports in IYP.

Michelle will respond with,

***"Captain, the aircraft is ready. Please ensure that we have a properly assigned Flight Number and set the top of the climb altitude for this leg. If you'll be using the ACARS logging system on this flight, please bring up the ACARS window and provide the route information. Thank you."***

**Set Top of Climb Altitude (Cruising Altitude)**

You need to tell your IYP Co-Pilot Michelle/Mike what your Cruising Level will be for this flight. So, say the following phrase:

***"Make the top of climb altitude one five thousand."***

**Provide the Route Information for ACARS**

In order to get the Route information, ask Michelle....

***"Bring up G P S."***

Click on the button **FPL** (Flight Plan). You will note that there are three entries:

**CYVR  
SEA  
KSEA**

The **CYVR** and **KSEA** are the airports themselves. These are not waypoints and should not be entered into the **Route** text box. **SEA** is the only waypoint in this example.

Instruct Michelle to bring up the ACARS window by saying...

***"Bring up ACARS window."***

This will show the departure ICAO as **CYVR** and the destination ICAO as **KSEA**. The Flight Number **1124** will be displayed in the Call Sign box. However, the **Route** information will be blank,

Ensuring Caps Lock is turned on, enter **SEA** into the **Route** text box and then say...

***"Kill ACARS window"***

After completing the foregoing steps, you will note that the APU is still running and the new passengers are being welcomed with Cabin Music, etc.

Michelle is likely nagging you....

***"Are we ready for the pre-flight checklist?"***

If you are still performing the above steps and are not yet ready, say...

***"Wait a minute."***

After you have finished entering the Route information and are ready to continue, say...

***"Please continue."***

From here on your Turn-Around flight is performed just as usual.

### **Executing a Continuing Flight**

You have just arrived at Vancouver's International airport (CYVR), Pacifica 1123, from Seattle, and you're sitting at your assigned gate. You executed the Parking checklist and have saved and uploaded your ACARS data to the IYP servers. Some of the passengers have disembarked; others are still seated onboard waiting for the aircraft to continue on the next leg of its flight to Calgary (CYYC).

You need to follow the same procedures used for Turn-Around flights. The only difference is that you say to Michelle,

***"Prepare aircraft for departure to Charlie Yankee Yankee Charlie."***

From here on in, your Continuing flight is performed as usual.

## Having Michelle make a Visual Approach

Before the release of IYP Version 4.1.0.128, our Blind and Visually Impaired (BVI) pilots have had to land their aircraft on runways equipped with an ILS (Instrument Landing System). However, difficulties arise when ATC sometimes instructs pilots to land on runways that are not so equipped, and they are told to make a Visual Approach. Obviously, this has been an impossible manoeuvre for BVI pilots.

As of the release of IYP Version 4.1.0.128, Co-Pilots Michelle or Mike, sitting next to their BVI captain, can now perform a visual approach on ANY runway. Naturally, our sighted users can also use this new IYP facility.

**NOTE: This feature is NOT available in the FREE IYP version.**

### How it Works!

Having Michelle or Mike perform a **Visual Approach** is accomplished much in the same manner as one currently executes an ILS approach. Here's the sequence.

Let's assume that ATC has assigned you runway 16 which is not equipped with ILS. As you approach the airport, ATC will instruct you to turn to a heading to intersect with runway 16 and will ask you to report when the runway is in sight. Obviously, this is problematic for a BVI pilot. Therefore, simply report that you have the runway in sight, and then say to Michelle...

***"Prepare to land on Runway 16."***

or,

***"Prepare to make a visual approach on Runway 16."***

She will respond with something like...

***"Captain, I've made the course 162, and I'm turning the aircraft towards the approach entry point."***

At this point, you'd likely execute the Approach and Landing checklists by saying...

***"Approach checklist."***

As the aircraft reaches the approach entry point (basically lining up with the runway), Michelle will say...

***"Captain, I'm making a gradual turn towards final approach."***

As the aircraft progresses towards the runway, Michelle will determine when the aircraft needs to start its descent, and you'll hear her say...

***"Captain, we're starting our descent."***

Michelle executes the rest of the approach and landing procedures in basically the same manner as with an ILS approach.

## Entry Point

The Entry Point for a given runway is approximately 7 miles from the runway's threshold for General Aviation (GA) aircraft, and approximately 16 miles out for all other type of aircraft. Therefore, it's a good idea to make your turn onto base about 12 miles out for GA aircraft and 20 miles out for all others. If you're less than the Entry Point distance from the runway, and you ask Michelle to make a Visual Approach, she will actually turn around and head back towards the Entry Point in order to begin the approach.

## Approaching the Destination Airport Special Considerations

As you approach the destination airport, and you get to about 20 miles out, you can say, for example...

***"Prepare to make a Visual Approach on Runway 12 left."***

Michelle will indicate that she's set the Course and is turning the aircraft to capture the Entry Point. You'll then call for the Approach and Landing checklists.

If you are flying a commercial aircraft with passengers, you are probably flying IFR. Therefore, ATC will likely be telling you to turn left, or turn right, perhaps descend even further, etc. Acknowledge all of these commands from ATC, but...

### **DO NOT ACT ON THESE INSTRUCTIONS**

Why? Because Michelle is on a mission to get the aircraft on the ground in her own manner, and she'll take care of everything.

## VFR or Free-Flight

It's also worth noting that if you are not flying IFR, and as a result are not being directed towards an assigned runway by ATC, you can ask Michelle to make the Visual Approach from anywhere within a 50-mile distance from the chosen runway. She will guide the aircraft from its current location to the Entry Point and begin the approach. This is extremely handy if you find yourself lost in space!

## Landing Modes

As is the case with an ILS approach, there are different ways you can land the aircraft...

1. Do not execute the Approach and Landing checklists
2. Execute the Approach and Landing checklists but decline Michelle's help
3. Execute the Approach and Landing checklists, accept Michelle's help but manage the touchdown yourself
4. Execute the Approach and Landing checklists, accept Michelle's help and have Michelle Auto-Land the aircraft

**NOTE:** You CANNOT use this Visual Approach feature in modes 1 or 2 above.

## Using Mode 3 (above)

As the aircraft descends below 1,000 feet AGL, Michelle will say...

***"Captain, you'll be doing the landing. It's your plane."***

As the aircraft nears touchdown, Michelle will automatically disengage the Auto-Pilot and release the Auto-Throttle (Speed Selector) and it's up to you to put the aircraft on the center line!

**Mode 3** is selected by saying...

***"De-activate Auto-Landing"***

**NOTE:** This setting is "remembered" and remains in effect on subsequent flights.

**Using Mode 4** (above)

As the aircraft descends below 1,000 feet AGL, Michelle will say...

***"Captain, I'll handle the landing. It's my plane."***

As the aircraft nears touchdown, Michelle will automatically release the Auto-Throttle (Speed Selector) and then Auto-Land the aircraft.

**NOTE:** Look under the [Supported Aircraft](#) section of the IYP Website for a list of the aircraft that can be auto-landed; look for "**Yes**" under the column **AL**.

**Mode 4** is selected by saying...

***"Activate Auto-Landing"***

**NOTE:** This setting is "remembered" and remains in effect on subsequent flights.

### **Auto-Landing Accuracy**

The accuracy of Mode 4 Auto-Landings is highly dependent upon environmental conditions, CPU speed, and in particular, crosswinds. In addition, crosswinds will have a greater effect in knocking smaller aircraft off course than larger commercial jetliners.

**NOTE:** Unless you are landing with near minimal crosswinds, I would strongly suggest that "Deactivate Auto-Landing" and manually put the aircraft on the centre-line.

### **Local Database**

Please keep in mind that your local database needs to be created **BEFORE** the Visual Approach feature can be properly used. This is because the Visual Approach facility requires additional airport/runway information not found in the default database. For information regarding the construction and/or updating of a Local Database, please refer to the section entitled:

#### **Creating and Updating Local Airport Database**

on PAGE 52 of the IYP User's Manual.

## Starting your Descent and Calculating your Descent Rate

It is often said that making a good landing starts with making good approach. This section is therefore aimed at giving you a few pointers on how to perform a good approach.

In the early days of aviation, few aircraft were pressurized. A pilot who waited until the last minute to start his descent, naturally descended very rapidly. This caused his passengers a lot of discomfort due to the rapid pressure changes on their eardrums. Understandably, Captain Droplikearock became very unpopular!

Naturally, jetliners are pressurized to compensate for these rapid changes. Nonetheless, nowadays nearly all pilots have adopted the 300 feet per mile rate of descent with un-pressurized aircraft to give the passengers a break.

### When do I start my descent?

Your rate of descent should be about 300 feet per mile, or if you prefer, about 3,000 feet per 10 miles. So, let's assume that you are flying into Vancouver (CYVR) where the airport is (for all intents and purposes) at sea level, and you're cruising at 30,000 feet. You should begin your descent into Vancouver 100 miles from the airport.

$$30,000 / 300 = 100 \text{ miles}$$

Similarly, if you're cruising at 9,000 feet, you should begin your descent 30 miles out.

$$9,000 / 300 = 30 \text{ miles}$$

If you're flying into Denver International where the elevation is 5,431 feet above sea level, and you're cruising at 30,000 feet, then you take 30,000 less the airport's altitude to get the amount of feet you need to descend, e.g.

$$30,000 - 5,431 = 24,569$$

Call it 25,000... that's close enough for government work!

$$25,000 / 300 = 83 \text{ miles.}$$

Okay... that was easy!

### Final Approach

As stated above, for a 3 degrees glide path on approach, the descent rate should be about 300 feet per mile. Therefore if you are 6 miles out when you turn onto final approach, you should be at about 1,800 feet above the airfield elevation (AGL) when intercepting the glide path. If you are 10 miles out when you turn on final approach, you should be about 3,000 feet AGL when intercepting the glide path, etc.

## Calculating Your Descent Rate?

I'll first give you the more complex equations, followed by a much simpler way to calculate all of this stuff.

To get the rate of descent, you take the number of feet you need to descend (in hundreds of feet) and multiply that by your groundspeed in knots. Then, multiply that by 2 and divide by one less than your distance from the destination in miles. That's your descent rate!

Here's an example. You're flying your Baron 58 and you're cruising at a speed of 120 knots at an altitude of 9,000 feet and you want to descend to 3,000 feet. And, you want to do this over a distance of 20 miles.

This means that we need to descend 6,000 feet over a distance of 20 miles. Expressing the 6,000 feet in hundreds means dropping the last 2 digits, which gives us 60. We then multiply 60 times our groundspeed of 120 knots, which gives up 7,200. Now, we multiply by 2 and we get 14,400. Finally, we divide 14,400 by the distance and we get a descent rate of 722 feet per minute.

## Whew!

### Here's a Much Simpler Way!

Simply multiply your current airspeed by 6!

$$120 * 6 = 720$$

So, make your rate of descent 720 feet per minute!

### NOTE:

Isn't it nice to know that if Michelle is controlling the airspeed, she not only tells you when to start your descent, she also automatically calculates the optimum rate of descent for you?

Thank you Michelle!

## Update your FSX ATC Voice Pack

It would certainly be nice if when flying for **It's Your Plane Virtual Air (IYP-VA)**, ATC would refer to your aircraft as...

***"It's Your Plane 518. Descend and maintain 5,000."***

So, let's do that.

There's a terrific **FREELY** downloadable programme called **EditVoicepack** that offers a simple interface to edit the file containing the ATC communication used in Microsoft Flight Simulator. It is possible to change the phraseology as well as add airline call signs, airports, and aircraft types.

**EditVoicepack** already contains thousands of ready made entries and it allows you to accelerate the existing voices for a more realistic experience and better handling of traffic dense environments.

### The Process

First, go to this page:

<http://www.editvoicepack.com/>

and carefully read the documentation. Then DOWNLOAD, SAVE, UN-ZIP and INSTALL the EditVoicepack application.

After installation, you'll find it located under:

**All Programs > EditVoicepack X**

# STOP!!!

There are a couple of things we need to take care of before launching the EditVoicepack application.

1. Ensure that **FSX** is **NOT RUNNING**. If FSX is running, close it!
2. You need the Voice Pack for **It's Your Plane**. You download it from here:

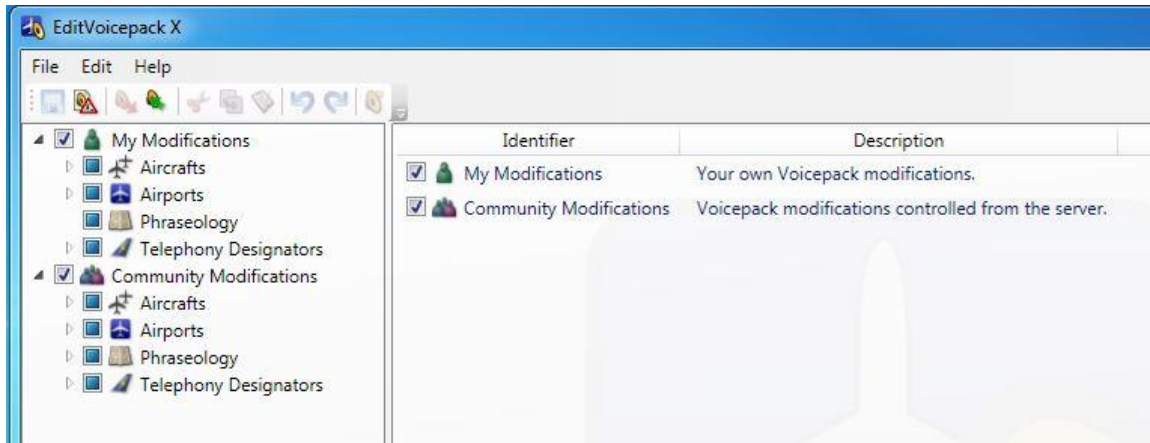
<http://www.itsyourplane.com/DB/iyvoicepack.zip>

**DOWNLOAD** and **UN-ZIP** this file into a folder you'll easily remember. The unzipped file is suitably called:

**itsyourplane.evpmo**



Great. Now, when you open the EditVoicepack programme (**All Programs > EditVoicepack X**), you'll see this:



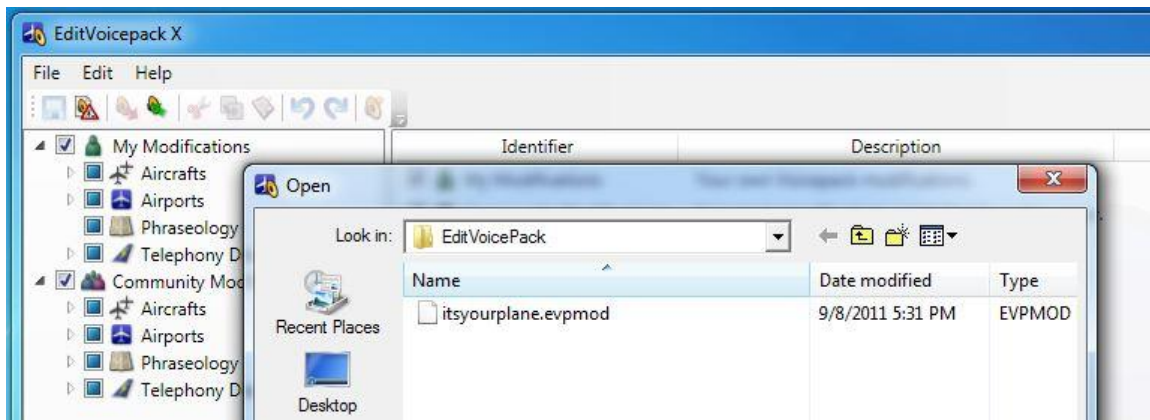
### Now let's import the It's Your Plane Voice Pack.

Referring to the image above, click on **File**, then select **Import Modifications**.

The "**Open**" window will appear where you will locate the

**itsyourplane.evpmod**

file that you downloaded from the IYP site.



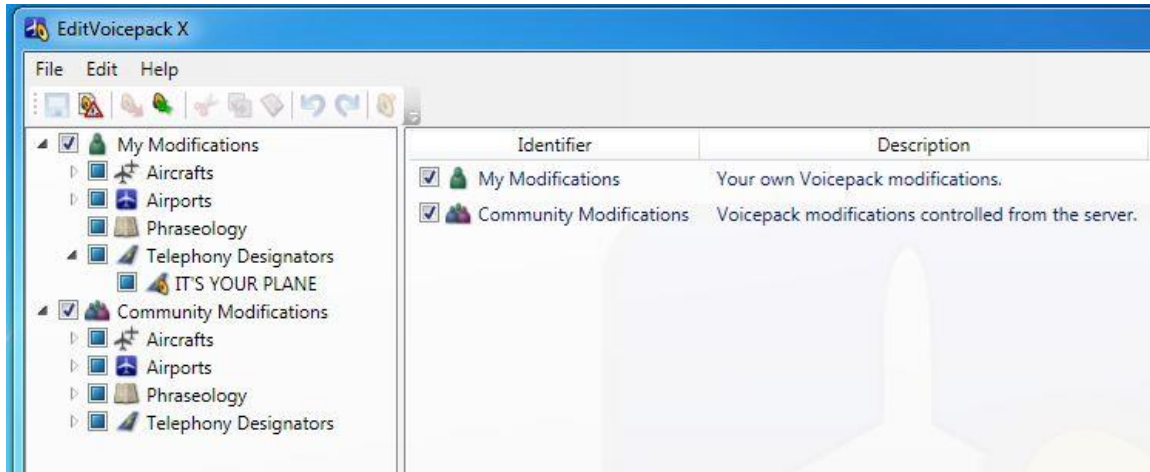
Select the file and press Open.

### Verify that we've done the foregoing properly.

Click on the TINY ARROW next to the item called:

**Telephony Designators**

You should see IT'S YOUR PLANE listed under this heading as shown below...



**Great!**

Now click on the **File > Save**.

Finally, let's put it all together.

Click on **File > Update Voicepack**.

### Options:

There are a number of options that you can use when compiling your newly created Voicepack. Please read the excellent documentation provided by the developer of this fine programme.

### You're Done!

After the update has been processed, close **EditVoicepack X**, launch **IYP**, load your next It's Your Plane Virtual Air (IYP-VA) flight, and experienced the exciting difference!

Here's the User's Manual for EditVoicepack:

<http://www.editvoicepack.com/readme.html>

Have fun guys and girls!

Robert

PS. If you find that you no longer hear "**Experimental**", but rather now get "**real**" airline names, you can thank **Lars**... the developer of **EditVoicePack**. Please consider making a donation to support Lars' efforts as he constantly updates this fabulous FREE programme!

## Altering a Runway's Threshold

### ILS Approaches

Within the flight simulator, the ILS approach parameters (green funnels you observe in the Garmin GPS) that are used by the aircraft's auto-pilot to steer an aircraft to a runway's threshold on approach, are maintained within disparate scenery files, not actually synchronised with the runway scenery itself.

### IYP Visual Approaches

When you ask Michelle (aka Mike) to perform a Visual Approach to a given runway, it is assumed that the destination runway is not equipped with ILS facilities. Naturally, you can still ask Michelle to perform a Visual Approach to a particular runway, even if it is ILS equipped.

### How IYP Derives a Runway Threshold

IYP does not use disparate information for a Visual Approach, as is the case with an ILS approach. Rather, IYP grabs the Latitude and Longitude for the destination runway from the file called Local\_IYPDB.XML located in the folder entitled IYPDB, under the root folder of your simulator, e.g.

```
C:\
  Program Files (x86)\
    Microsoft Games\
      Microsoft Flight Simulator X\
        IYPDB\
          Local_IYPDB.XML
```

The Local\_IYPDB.XML file contains all of the information for every airport and their associated runways on a worldwide basis. This information is derived by extracting data from the simulator's actual scenery file... data used to actually "paint" the runway on the screen.

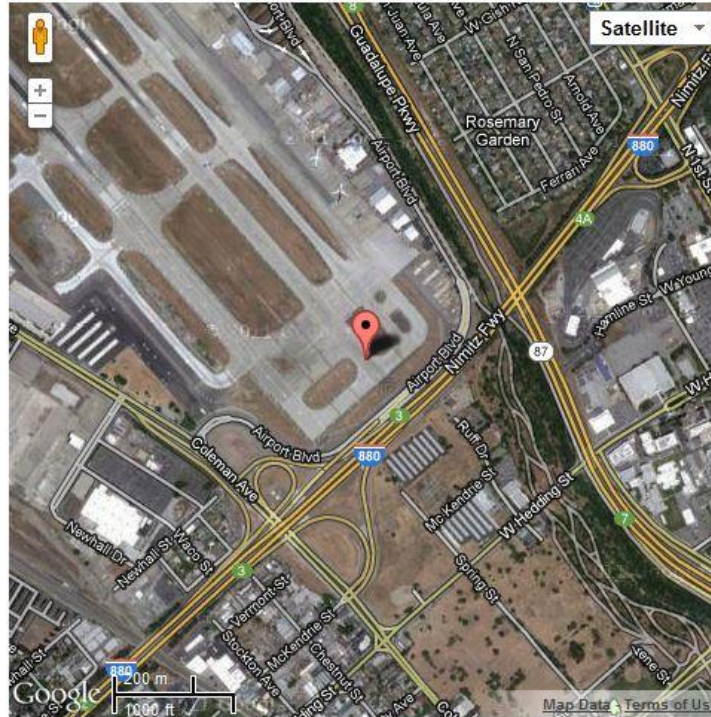
Every runway within this database contains the runway's Latitude and Longitude. Here's an example of the information for Runway 30R at KSJC, San Jose, California.

```
<Runway id="30R">
  <Len>11003</Len>
  <Hdg>302.890</Hdg>
  <Def>Concrete</Def>
  <ILSFreq></ILSFreq>
  <Lat>37.352692</Lat>
  <Lon>-121.915718</Lon>
</Runway>
```

The foregoing approach serves us well for the majority of runways worldwide. However, there are instances where the runway's threshold is displaced.

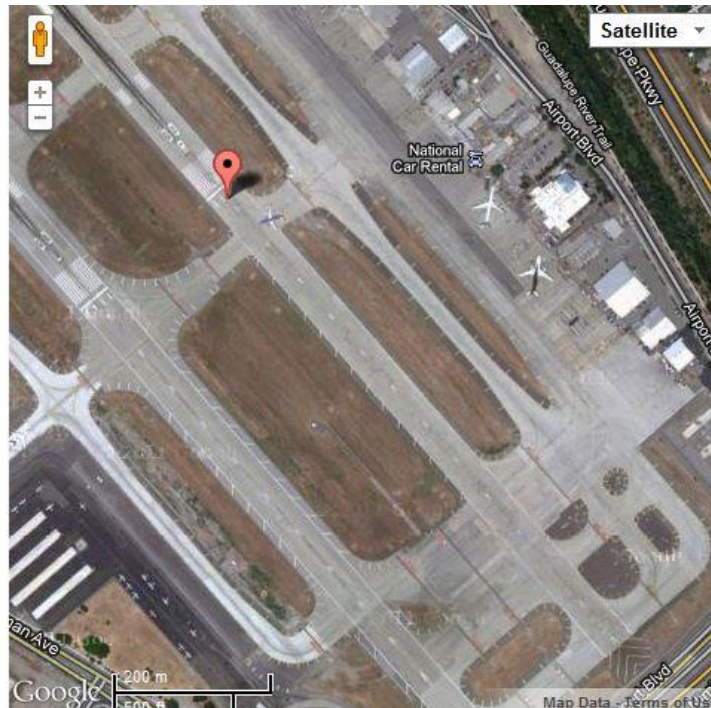
### Displaced Thresholds

Runway 30R at KSJC is actually a perfect example of a runway where the threshold is displaced.



One can see that the runway's actual threshold (where 30L is displayed), is further down the runway, thereby shortening the actual runway. With the data unmodified, Michelle will touchdown well in advance of the displaced threshold.

We'd actually like to have Michelle use the proper threshold, down near the 30L markings. To wit...



## Getting Latitude and Longitude for a Displaced Threshold

Using runway 30R at KSJC as an example, the simplest way to accomplish moving the runway's threshold is to create and/or load a flight plan where the origination airport is KSJC. Then using an IYP facility developed for our blind and visually impaired (BVI) pilots, say to Michelle...

*"Michelle, let's taxi to and hold short of runway three zero right."*

Michelle will SLEW the aircraft into position at the start of runway 30R.

Now, slowly taxi the aircraft down the runway to the displaced threshold location as displayed in the second image above.

Then say the phrase...

*"Export aircraft position data"*

Michelle will respond with...

*"Your position data has been exported to a file called, IYPPOSITIONDATA.TXT which can be found in the root folder of your simulator."*

In the **IYPPOSITIONDATA.TXT** file, you will observe two values representing the Latitude and Longitude of the aircraft's current position on the runway. e.g.:

**37.3579874448638**  
**-121.921528238242**

## Making Database Adjustments for a Displaced Threshold

Now you need to open the file called **Local\_IYPDB.XML** located in the folder entitled IYPDB, under the root folder of your simulator, e.g.

`\IYPDB\Local_IYPDB.XML`

and (in this example) search for KSJC. Once you've located the airport data, scroll down to Runway 30R.

**<Lat>37.352692</Lat>**  
**<Lon>-121.915718</Lon>**

Now carefully replace the existing **Lat** and **Lon** values with the data you've extracted from the **IYPPOSITIONDATA.TXT** file, save your data, and close the file.

**IMPORTANT NOTE:** If you re-build your Local Database via the IYP Options Panel, the newly altered information will be overwritten. Therefore, please save the **IYPPOSITIONDATA.TXT** data in a safe place so that you can easily replace these values after a re-build.

**NOTE:** In **WideFS** installations the Local\_IYPDB.XML and IYPPOSITIONDATA.TXT files are located on the **CLIENT** PC.



## SmartStart<sup>®</sup> Enhancements

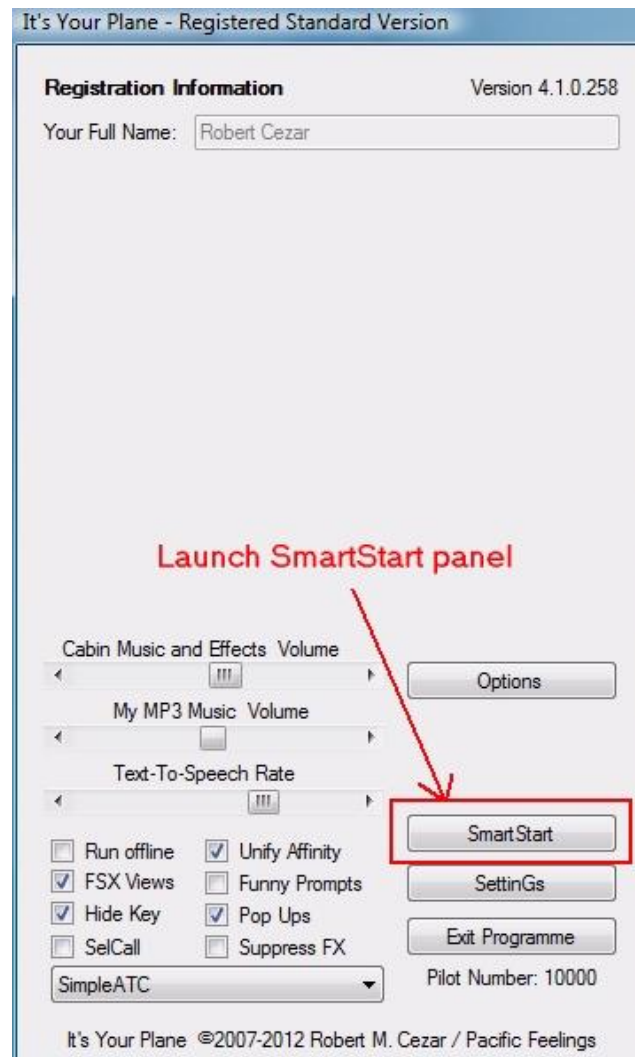
### Overview

**SmartStart** is a remarkable facility that allows you to simplify the launching of applications and programmes for your flight session, including the ability to launch FS2002, FS2004 or FSX, Radar Contact, or any other programme you desire. Please refer to the section entitled **SmartStart** which can be found on PAGE 63 of the IYP Users' Manual for details.

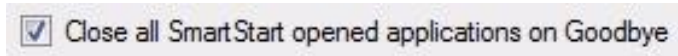
### Shutting Down Programmes After IYP Session Closes

A number of IYP users have requested that the **SmartStart** feature built into IYP, also have the capability to automatically shut down all programmes that were opened by **SmartStart**. In addition, others have asked that **SmartStart** automatically launch a programme(s) when IYP closes.

With IYP running, minimise your simulator, then open the **SmartStart** panel by clicking on the **SmartStart** button on the IYP Control panel.



On the **SmartStart** panel, you will see a new checkbox entitled:



By placing a checkmark in this checkbox, when you...

say, **"Goodbye Michelle, and thank you"**

or...

say, **"Goodbye Mike, and thank you"**

or...

click on the **Exit Programme button** on the **IYP Control panel**

to end your IYP session, all applications that were opened by the **SmartStart** facility will be closed.

## Launch Programme(s) After IYP Session Closes

Referring to the section entitled **SmartStart**, which can be found on PAGE 63 of the IYP Users' Manual, you will see an additional option under the **Open When** drop-down list entitled... **When IYP Closes**.



By selecting **When IYP Closes** the chosen programme will NOT be launched when IYP first runs, but rather when IYP closes.

This facility is useful for launching batch programmes (.BAT) to shut down other applications and/or processes that are running; ones that are no longer necessary after an IYP session is terminated, e.g. the Speech Recognition Engine (sapisvr.exe), etc.

## Using 32-Bit Voice Fonts on 64-Bit Platforms

Start by installing your 32-Bit Voice font (e.g. ATTD TNV1.4 Mike 16 per the instructions provided by the manufacturer of the Voice Font).

On both Vista 64 and Windows 7 64-Bit platforms, the computer's **Control Panel** applet for selecting the default voice only works with 64 bit voices (e.g. Anna).

In order to gain access to the 32 Bit Voices Fonts (e.g. ATTD TNV1.4 Mike 16), you need to gain access to the **32 Bit Speech Control Panel**.

To do this...

Press **Start > Run**

If the **Run** command is not visible in the list of commands, then...

Right click on the list  
Select **Properties**  
Select the **Start Menu** tab  
Click on **Customize**  
Scroll down to expose **Run Command**  
Place a **check mark** in the box

In the **Run Command** dialog box, copy and paste the following in the **Open** list:

**%windir%\SysWOW64\speech\SpeechUX\sapi.cpl**

**Press OK**

The 32 Bit Control Panel applet will appear on the screen. Click on the...

**Text to Speech**

tab. From the...

**Voice Selection**

drop down list, select the 32 Bit Voice Font (e.g. ATT DTNV1.4 Mike 16)

Click on...

**Preview Voice**

to ensure that everything is working properly.

After doing so, launch your **simulator** and the **It's Your Plane** programme.

When you hear Michelle (aka Anna) say...

**"Captain - It's Your Plane - We're ready to go."**



minimise the simulator, to expose the IYP Control Panel. Click on button entitled

**Options**

Use the drop down list entitled:

**Select Co-Pilot Voice Prompt**

**Select your 32-Bit Voice Font**

Click on the button entitled:

**Close Options Panel**

The IYP programme will re-cycle and you will next hear your 32-bit Voice Font.

You're done!

## Blind Pilots Taxiing to Gate or Parking Areas

Effective IYP Version 4.1.0.265, Blind and Visually Impaired (BVI) pilots can effectively taxi to gates and parking areas.

### Here's how it works.

With the Blind Pilot Mode set to ON, upon landing at an airport, Michelle will (as usual) bring the aircraft to a complete stop on the runway. Once Michelle reports the state of the aircraft and says to you, "Captain – It's Your Plane", followed by, "The Approach and Landing checklists have been completed", she will then say... "Captain, I will be exiting the runway shortly so that we can contact ground operations."

The Tower will likely start nagging you to... "Exit runway when able!" Just ignore them for the moment.

Michelle will then (after a short delay) welcome the passengers to the local area, give them the local temperature and ask them to remain in their seats, etc.

If you're flying a flight for IYP Virtual Air, Karen (our Lead Executive Assistant) will also speak to the passengers... and you never know what she'll say!

Shortly thereafter, the IYP system will lift the aircraft and move it slightly off of the runway. This will immediately cause the Tower to request that you Contact Ground operations on a specific frequency... e.g., "Contact Ground on 118.5".

You contact Ground Operations in the normal manner and request either Taxi to Gate, or Taxi to Parking... whichever is available at that particular airport.

### Taxiing to a Gate:

When Ground Operations assigns a parking gate, for example gate Bravo 19, you say, "Michelle, let's taxi to gate Bravo one niner." CAUTION: Do not say "Michelle, let's taxi to gate Bravo nineteen." Each digit must be individually expressed. Michelle will respond with, "Captain, we are taxiing to gate Bravo one niner."

Michelle will then offer to run through the Taxi to the Gate checklist with you. It is important that you execute this checklist... especially if you are flying for IYP Virtual Air. Failing to do so will cause you to lose compensation!

It will take about 90 seconds for Michelle to taxi to the gate. Please be patient during this time.

After the delay, Michelle will move the aircraft to the assigned gate and say, for example, "Captain, we are now parked at gate Bravo one niner." She will then immediately offer to run through the Parking checklist with you. You and Michelle conduct the checklist procedures. If you had initially started the ACARS logging, then at the conclusion of the Parking checklist (or the Shut Down checklist if a General Aviation aircraft is being flown), Michelle will indicate that you can save your ACARS data. NOTE: If you are flying for IYP Virtual Air, both the start and end of the ACARS process is automatically performed without any intervention on your part.

**Taxiing to General Aviation Parking:**

When Ground Operations say, "Taxi to general aviation parking via taxi... whatever", you simply say, "Michelle, let's taxi to general aviation parking". Michelle will select an appropriate parking spot for the size of aircraft you are flying, and respond with, for example, "Captain, we're taxiing to parking area seven."

All of the subsequent procedures are precisely the same for taxiing to a parking area, as they are for taxiing to a gate... as explained above.

**AI Traffic:**

When Ground Operations assigns you a specific gate, you can be assured that an AI aircraft is not occupying that gate area. However, when Ground Operations instructs you to go to the general aviation parking area and Michelle picks a suitable gate, it is entirely possible that an AI aircraft is already occupying that parking spot. To resolve this, Michelle ZAPS the AI traffic to ensure that the parking spot is clear. Once you are in the parking area, the AI traffic will begin re-building as normal.

**NOTE:** You will hear a sound like an "explosion" when Michelle ZAPS the traffic. Do not be alarmed. This sound can be eliminated by editing the FSUIPC4.INI file located in the Modules folder under the ROOT folder of your simulator. Simply set...

**ZapSound=None**

Enjoy!

# Calculating Your Descent

## Should you use height, altitude or flight level?

There are several ways to indicate the vertical position of aircraft and/or obstacles. HEIGHT, ALTITUDE, ELEVATION and FLIGHT LEVEL are used. These words are sometimes used interchangeably, however each one has a specific meaning and is used in a particular situation.

To understand the specific meaning of each of these words, visit this site:

<http://www.skybrary.aero/index.php/Altitude, Flight Level and Height>

## Determining the appropriate flight level based on the choice of aircraft.

Always remember that Michelle is a walking, talking FMC (Flight Management Computer) and will not let you do anything too foolish. She always know the maximum ceiling of any given aircraft, however, you can easily compute any flight level using the following two accepted rules:

1. The universally accepted nominal rate of climb and descent of any aircraft is 300 feet per nautical mile (NM). Using this rate of climb you would reach a . . .

300 ft altitude in 1 NM  
3,000 ft altitude in 10 NM  
30,000 ft altitude in 100 NM

2. The Thirds rule of thumb.

Divide the flight distance by three = 1/3 to climb, 1/3 to cruise, 1/3 to descend.

**Example 1:** A flight from Los Angeles to San Francisco in a Boeing 737-800 with a maximum ceiling of 37,000 feet and a distance of about 300 NM.

Divide the distance of 300 NM by 3. This will mean that you will be climbing for 100 NM, cruising for 100 NM and descending for 100 NM.

You would reach an altitude of 30,000 feet in 100 nautical miles and could level out and cruise for the next 100 NM, then begin your descent. Alternatively, you could climb to your maximum ceiling of 37,000 feet, but this would shorten your cruise time, i.e. climb for 123 NM, descend for 123 NM, leaving 54 NM for cruising.

**Note:** If you were flying a Cessna for this trip, you would obviously not be able to reach such a high ceiling; having a maximum ceiling of 12,000 feet. Ergo, using the accepted rate of climb, it would take 40 miles to reach your maximum cruising altitude of 12,000 feet, leaving you with a longer cruising distance before beginning your 40-mile descent to your destination airport (300 miles minus 80 miles = 220 miles at a cruising altitude of 12,000 feet).

**Example 2:** San Diego to Los Angeles in a Boeing 737-800 with a maximum ceiling of 37,000 feet and a distance of approximately 90 NM.

Divide the distance of 90 NM by 3. You will be climbing for 30 NM, cruising for 30 NM and descending for 30 NM. Given the usual rate of climb, you would reach 9,000 feet in 30 NM. This will be your cruising altitude.

**Example 3:** A flight between Vancouver and Paris in a 747-400 with a maximum ceiling 41,000 feet and a distance of about 4,290 NM. As you will see, the rule of thirds will not work here.

Dividing the distance by 3 would mean you would be climbing for 1,430 NM. Michelle would be most upset with you! Everyone would run out of oxygen, the passengers would jump out of the plane with their non-existent parachutes, and your aircraft would eventually disintegrate! In fact, Michelle will not allow you to fly any higher than the maximum ceiling for any given aircraft – she has it all calculated to keep you and your passengers flying safely!

In this case, using the usual rate of climb, you would reach your maximum altitude after 132 NM. Therefore, subtract 132 NM for climb out and 132 NM for descent (264 NM) from your total distance of 4,290 NM, and you know that you will be cruising at an altitude of 41,000 feet (FL410) for a distance of 4,026 NM, giving you plenty of time to ask Michelle for a martini.

## Setting Text-To-Speech Volume

Prior to IYP Version 4.1.0.299, the Text-To-Speech Volume (TTS) has always been set to the maximum of 100% on FSX, 70% with FS9, and users were instructed in the IYP Users' manual (PAGE 41) to adjust all other simulator sounds against this volume in order to perfect a natural balance. However, some TTS voice fonts are simply too loud, and a method was needed to reduce their volume.

When you first run the IYP application, a file entitled...

### **IYPVoice.txt**

is created in the root folder of your simulator, typically...

**C:\Program Files (x86)\Microsoft Games\Microsoft Flight Simulator X)**

Opening this file with Notepad, will reveal...

Microsoft Anna - English (United States),100

The Voice Font Name is followed by a comma and the value of 100.

This value can be varied between 10 and 100 to adjust the TTS volume.

**NOTE:** If you have selected a Pilot's Name in the IYP Options Panel, the contents of the file will append your name to the file. In the following example, I have selected the AT&T Voice Font called Mike (see the section entitled **Using 32-Bit Voice Fonts on 64-Bit Platforms** if needed), added my name (Robert), then subsequently set the TTS volume to 70 in order to reduce the font's volume. My file looks like this...

**ATT DTNV1.4 Mike16,70**

**Robert**

## Sidestep “max\_gross\_weight” error

We have added the capabilities to side-step the

**max\_gross\_weight**

declaration in the **AIRCRAFT.CFG** file, by adding an exception file to the ROOT folder of the aircraft, e.g.

C:\Program Files (x86)\Microsoft Games\Microsoft Flight Simulator X\

Using **NOTEPAD**, create a file called:

**IYPEExceptions.txt**

In the file place the...

**sim=?????**

value(s). For example, in this case, we'll sidestep 2 aircraft...

**B737-800WL|pmdg\_j41**

Separate the individual entries with the PIPE symbol (|).

You could also simply insert the following single word...

**PMDG**

and the system will side-step the **max\_gross\_weight** for **ALL** PMDG planes.

Save the file in the simulator root folder, e.g.

C:\Program Files (x86)\Microsoft Games\Microsoft Flight Simulator X\IYPEExceptions.txt



## Perform Fuel Loading Operations

As part of the Pre-Flight checklist procedure, we have deployed a new fuel verification routine to ensure that an optimum amount of fuel is loaded before engine start up.

### How Fuel Consumption Data is Garnered:

The reference fuel consumption data is automatically derived from user flights conducted using the ACARS logging system. Thus, we encourage all IYP users to activate the ACARS system as often as possible, so as to continually refine the accuracy of the fuel consumption data.

### Gallons per Mile:

In the folder named IYPDB, located below the main FSX root folder, you will see a file named:

#### **IYPFuelLibX.txt**

Here's a typical data set from that file:

```
A321,3.51098318671031
B190,0.579592310819444
B200,0.405366165282537
B350,0.529415701760257
B60T,0.247867803837953
B737,3.91826808449764
B738,3.28328198151334
B744,7.52067841006979
B752,4.52425373134328
B763,4.77800366936084
B772,3.34679543459175
B773,8.62640264503947
BE58,0.153301290159373
BE60,0.236603243325358
C172,0.0852878464818763
C182,0.0883338409990862
C185,0.085872009813944
C206,0.0919244835425521
C208,0.307287093942054
C210,0.0910246971420922
C340,0.205124112060021
C750,0.562709329171138
CRJ7,2.12431630666543
DC3,1.17156154710319
DH8B,1.47132358512008
LJ45,0.393331149893167
M20T,0.097741381587637
PA28,0.0764771185395337
PA34,0.103243182583324
```

Opening this file with Notepad, you will see that each entry contains a 3-4 character aircraft ICAO code, followed by the Gallons/Nautical Mile consumption data.

### **Pre-Flight Checklist:**

When you execute the Pre-Flight checklist, the IYP application ensures that you have the optimum amount of fuel to conduct the planned flight. This presupposes of course, that you have properly loaded the flight as described in the section entitled:

#### **How to Properly Load a Flight Plan and a Flight**

located at the top of this document. Michelle will report if you have insufficient or excessive fuel loaded for the flight being conducted.

Michelle does **NOT** conduct any fuel quantity adjustments at this reporting stage. Rather, when flying most jetliners, Michelle will ask you if you'd like to perform fuel loading operations towards the end of the Pre-Flight checklist. In the case of General Aviation (GA) aircraft, you can simply say the phrase...

#### ***"Perform Fuel Loading Operations"***

when asked by Michelle to verify the fuel quantity.

**IMPORTANT NOTE:** Fuel loading operations **MUST** be conducted **BEFORE** starting the **ACARS** logging system, which usually occurs as part of the Before Start Up checklist.

### **Computing Fuel Requirements:**

The IYP application uses the flight's nautical miles and multiplies this value by the Gallons/Nautical Mile consumption data from the reference file data. The IYP application then adds additional fuel requirements for taxiing both at the departure and destination airports, as well as sufficient fuel to conduct a minimum of two "go-arounds" and/or a diversion to an alternate airport.

### **Help Us Compute Fuel Consumption:**

As requested earlier, utilise the ACARS logging system as often as possible, so as to provide us with valuable data so that we can continually refine the accuracy of the fuel consumption data.

## IYP Integrated Kneeboard Checklists

Without aircraft checklists, you'd have to commit directly to memory all of the steps required to start, take off and land an aircraft. **A VERY BAD IDEA!**

As you know, the IYP application uses extensive and sophisticated checklists to ensure that the aircraft is properly set up for each stage of flight. Comprehensive checklists for each of the supported aircraft are available on the IYP web site under the section entitled:

### Supported Aircraft

by clicking on the aircraft's **ICAO** code, under the column entitled **AC**.

### Integrated Checklists:

Effective IYP Version 4.1.0.316, you can now view/hide the same checklists while in flight by launching the aircraft's **Kneeboard**. To do this, simultaneously press the **SHIFT** and **F10** keys, or simply use the phrases...

**"Bring up checklists"** and **"Kill checklists"**

respectively.

**NOTE:** This facility is only available with the **REGISTERED** version of IYP.

### How it Works in Detail:

The IYP application automatically does a backup of the standard Microsoft supplied checklists, and replaces them with the IYP checklists.

Let's use the **Cessna C172 Skyhawk** as an example.

Open Windows Explorer and navigate to the root folder of your simulator. If you installed FSX in the default location, it would typically be...

**C:\Program Files\Microsoft Games\Microsoft Flight Simulator X**

From there, navigate further down to...

**\SimObjects\Airplanes\C172**

In this folder you will see a file called:

**cessna172sp\_check.htm**

When you run the IYP application and load this particular aircraft, the system renames the above file to...

**cessna172sp\_check\_BACKUP.htm**

It then creates a **NEW cessna172sp\_check.htm** that contains the IYP checklists.

**Special Cases:**

In some cases, third-party Add-On aircraft are supplied **WITHOUT** default checklists. In this case, the IYP application creates the checklist and backup files using its own internally defined IYP name. The IYP application then inserts the checklist name in the AIRCRAFT.CFG file.

IMPORTANT NOTE: This facility is not available with the BVI mode enabled.

## Refile IFR Flight Plan While In-Flight

It is more than common for your filed IFR flight plan to be cancelled because you failed to respond to the ATC controller in a timely manner. We have added a voice command to resolve this aggravating issue. Simply ask Michelle to...

### ***"Refile IFR Flight Plan"***

This feature only works in-flight. This feature does **NOT** refile improperly loaded flight plans while on the ground.

## BVI Pilot Amphibian Landings

At the request of a few Blind (BVI) pilots, we have added the ability for Michelle to perform rudimentary water landings with amphibian aircraft like the DeHavilland DHC2, Grumman Goose, etc. When we say rudimentary, we mean rudimentary! Please do not expect Michelle to land the aircraft on a lake, 8,500 feet down a ravine!

### Procedures

Follow ATC directives to navigate the amphibian aircraft to the destination water landing area, and when ATC says something like...

***"Kenmore 123, airport is 11 miles at your 10 o'clock. Turn left heading 360. Report runway in sight."***

then ask Michelle to...

***"Acknowledge"***

Turn the aircraft to the specified heading, for example, say...

***"Turn left heading 360"***

Then, immediately tell Michelle to...

***"Report runway in sight"***

As soon as possible (before contacting local traffic), tell Michelle you want to conduct the approach checklist.

That'll do it.

**NOTE:** Michelle will start the descent as part of the approach and landing checklists, but will seem to level off at 1,000 feet. Don't be alarmed. She's simply trying to steeper drop from about one mile from the airport in order to clear hills and/or buildings.

**NOTE:** This feature only works for BVI pilots – sighted pilots will continue to make a visual approach.

## Airspeed Control

As you already know, It's Your Plane (IYP) has been designed in a manner that permits pilots to fly as they like, with very few restrictions. As such, there are many ways to accomplish the same function or manoeuvre in IYP. This "operational freedom" has been the principal driving force behind IYP development over the years.

This subject is broken into three (3) main sections; **Co-Pilot Controlled Airspeed**, dealing with aircraft not equipped with an auto-throttle where Michelle controls the actual airspeed, **Auto-Throttle Controlled Airspeed**, dealing with aircraft that are equipped with an auto-throttle as found in most modern jetliners, and a **General Information** section.

### Co-Pilot Controlled Airspeed

Before addressing how your Co-Pilot actually controls an aircraft's airspeed, it is important that you be aware of a couple of basic parameters: the aircraft's DEFAULT VERTICAL RATE OF CLIMB, and the aircraft's NOMINAL CLIMB OUT AIRSPEED.

#### Default Vertical Rate of Climb

You will notice that while on the ground, if you ask your Co-Pilot to set an altitude into the auto-pilot, he/she contemporaneously sets a value in the vertical rate of climb area. For example, if you ask your Co-Pilot to set an altitude of 4,000 feet in a Cessna Skyhawk...

*"Make the altitude 4,000"*

he/she will automatically place a value of 700 feet per minute in the VS area.



#### Nominal Climb Out Airspeed

Each aircraft manufacturer specifies a nominal climb out airspeed. In the case of a Cessna Skyhawk, the best rate of climb (Vy) is approximately 75 knots.

#### Getting Airborne

There are a number of ways you can get an aircraft airborne.

#### You Perform Takeoff Without Checklists

You can perform a takeoff procedure without any checklists or assistance from your Co-Pilot. Once lined up on the centre line, you can simply apply takeoff power, or ask your Co-Pilot to...

*"Apply Takeoff Thrust"*

You are expected to rotate the aircraft at the appropriate time and perform all other climb out functions, such as retracting the landing gear, operating the flaps, etc.



**Takeoff With Checklists – Co-Pilot Unassisted**

Before takeoff, you say to your Co-Pilot...

*"Takeoff checklist"*

Your Co-Pilot will ask you...

*"Do you want me to assist you?"*

You respond with...

*"Negative", or, "No thanks"*

Once lined up on the centre line, you can simply apply takeoff power, or ask your Co-Pilot to...

*"Apply Takeoff Thrust".*

Your Co-Pilot will call out the V1, Vr and V2 rates. You rotate the aircraft at the appropriate time and perform all other climb out functions, such as retracting the landing gear, operating the flaps, etc.

**Takeoff With Checklist – Co-Pilot Assisted**

Before takeoff, you say to your Co-Pilot...

*"Takeoff checklist"*

Your Co-Pilot will ask you...

*"Do you want me to assist you?"*

You respond with...

*"Affirmative", or, "Yes please"*

Once lined up on the centre line, you can simply apply takeoff power, or ask your Co-Pilot to...

*"Apply Takeoff Thrust"*

Your Co-Pilot will call out the V1, Vr and V2 rates. You rotate the aircraft at the appropriate time. Shortly after rotation, your Co-Pilot will ask you to set an appropriate airspeed by saying...

*"Captain, specify airspeed"*

Your Co-Pilot will then perform all other climb out functions, such as retracting the landing gear, operating the flaps, etc. After the flaps are retracted (if applicable) your Co-Pilot will suggest that you engage the auto-pilot...

*"Captain, I recommend that you engage the auto pilot at this time".*

**Co-Pilot Performs Takeoff With Checklists**

Before takeoff, you say to your Co-Pilot...

*"Takeoff checklist"*

Your Co-Pilot will ask you...

*"Do you want me to assist you?"*

You respond with...

*"Affirmative", or, "Yes please"*

Once lined up on the centre line, you say to your Co-Pilot...

*"I'd like you to perform the take off"*

Your Co-Pilot will call out the V1, Vr and V2 rates and will rotate the aircraft at the appropriate time. Shortly after rotation, your Co-Pilot will ask you to set an appropriate airspeed by saying...

*"Captain, specify airspeed"*

Your Co-Pilot will turn on the auto-pilot and perform all other climb out functions, such as retracting the landing gear, operating the flaps, etc.

**NOTE:** Our Blind and Visually Impaired (BVI) pilots should always use the "Co-Pilot Performs Takeoff With Checklists" procedure described above.

**NOTE:** Your Co-Pilot will only control the airspeed once airborne. You cannot preset the airspeed before takeoff. If you ask your Co-Pilot to set the airspeed while on the ground, he/she will respond with...

*"Ask me to do this after we're airborne, and I will be happy to comply"*

**We're Now Airborne...**

Now that we're airborne, your Co-Pilot will use the preset default vertical rate of climb with optimal thrust in order to get the aircraft to an altitude of 2,000 feet Above Ground Level (AGL). Beyond 2,000 feet, your Co-Pilot will automatically adjust the aircraft's elevator to achieve the maximum rate of climb, while ensuring that the aircraft maintains an airspeed in excess or equal to its nominal climb out airspeed. In the case of the Cessna Skyhawk, you may see your Co-Pilot increase the vertical rate of climb (VS) to 800 or 900 feet per minute. As the aircraft continues its climb out, lift diminishes with decreasing air density and the aircraft's airspeed therefore decreases. When the airspeed drops below the aircraft's nominal climb out airspeed, your Co-Pilot will automatically begin to decrease the vertical rate of climb (VS) in order to maintain the best climb out airspeed (Vy). In the case of the Cessna Skyhawk, once the airspeed drops below 75 knots, your Co-Pilot will start decreasing VS.

Please do the following. Climb into a Cessna Skyhawk, set the weather to clear skies, do all of your checklists, set your altitude to 12,000 feet, and get your C172 to the active runway. Then, perform your takeoff and watch what happens! As you

approach 10,000 feet, your Co-Pilot will likely have you climbing at 300 feet per minute, at 11,000 feet, 200 feet per minute, and at 12,000 feet, likely 100 feet per minute.

**IMPORTANT NOTE:** If you say to your Co-Pilot (for example)...

*"Set the vertical rate of climb to 700"*

he/she will perform the setting, then immediately respond with...

*"Captain, I am no longer controlling the airspeed"*

If you think about this, it makes absolute sense. Unless your Co-Pilot can control the vertical rate of climb, he/she cannot control the airspeed.

### **Have Your Co-Pilot Release Control of the Airspeed**

In order for you to take control of the airspeed, simply tap the brakes!

## **Auto-Throttle Controlled Airspeed**

Before addressing how your Co-Pilot actually controls an aircraft's airspeed through the use of the auto-throttle and the vertical rate of climb, it is important that you be aware of a few basic parameters: the aircraft's DEFAULT VERTICAL RATE OF CLIMB, the aircraft's CLIMB OUT AIRSPEED, the engines N1 RPM and the aircraft's MAXIMUM OPERATING SPEED.

### **Default Vertical Rate of Climb**

You will notice that while on the ground, if you ask your Co-Pilot to set an altitude into the auto-pilot, he/she contemporaneously sets a value in the vertical rate of climb area. For example, if you ask your Co-Pilot to set an altitude of 9,000 feet in a Boeing 737-800 (B738)...

*"Make the altitude 9,000"*

he/she will automatically place a value of 1,800 feet per minute in the "Vert Speed" area.

**NOTE:** Please refer to the checklists header for aircraft specifications and default settings.

### **Nominal Climb Out Airspeed**

All air traffic must maintain a maximum airspeed of 250 KIAS when operating below 10,000 feet. However, in the real world, there are exceptions granted by ATC. Many heavy jets require faster speeds, these include the B747, the MD11, etc., when at maximum weight. Aircraft requiring these higher speeds do not need to request it, but many pilots will advise ATC as a courtesy. For simplified consistency, IYP uses 250 knots for non-heavies, and 275 knots for the heavies.

### **N1 RPM**

N1 is the speed of the big fan at the front of the jet engine which can be seen from the outside. N1 can sometimes exceed 100% on take off. N2 is the turbine inside the engine. On some Rolls Royce engines, N3 is a turbine further in the core of the

engine. When the engine is started, N2 starts to turn which drives N1 and one can see the percentages on the EICAS screens in the cockpit. The N1 RPM percentage comes into play above 10,000 feet as explained later. Please note the diagram of the N1 cockpit display on the following page.

### Maximum Operating Speed (Vmo/Mmo)

The Vmo/Mmo read out on a B738 functions as limiting speed calculator.

(Vmo = maximum operating speed, Mmo = maximum operating mach number)

At lower altitudes, where the speed of sound is higher, the maximum speed is dictated by the maximum indicated airspeed (Vmo). As the aircraft climbs, at some point Vmo will be equal to Mmo, because the speed of sound decreases with altitude. As the aircraft continues to climb above this point, the limiting speed will be Mmo.



**NOTE:** For a complete overview of this subject matter, please go to this site:

[http://en.wikipedia.org/wiki/Airspeed\\_indicator](http://en.wikipedia.org/wiki/Airspeed_indicator)

### Getting Airborne

There are a number of ways you can get a jet aircraft airborne.

#### You Perform Takeoff Without Checklists

You can perform a takeoff procedure without any checklists or assistance from your Co-Pilot. Once lined up on the centre line, you can simply apply takeoff power, or ask your Co-Pilot to...

*"Apply Takeoff Thrust"*

Alternatively, if you are flying an aircraft equipped with TO/GA capabilities, you can say...

*"Take off, Go Around ON", or "T O G A ON"*

**NOTE:** The above voice commands produce the same effect with TO/GA equipped aircraft; the use of either command will activate the TO/GA functionality.

You are expected to rotate the aircraft at the appropriate time and perform all other climb out functions, such as retracting the landing gear, operating the flaps, etc.

### **Takeoff With Checklists – Co-Pilot Unassisted**

Before takeoff, you say to your Co-Pilot...

*"Takeoff checklist"*

Your Co-Pilot will ask you...

*"Do you want me to assist you?"*

You respond with...

*"Negative", or, "No thanks"*

Once lined up on the centre line, you can simply apply takeoff power, or ask your Co-Pilot to...

*"Apply Takeoff Thrust"*

Your Co-Pilot will call out 80 knots, V1, Vr and V2 rates. You rotate the aircraft at the appropriate time and perform all other climb out functions, such as retracting the landing gear, operating the flaps, engaging the autopilot, etc.

### **Takeoff With Checklist – Co-Pilot Assisted – No Optimized Airspeed**

Before takeoff, you say to your Co-Pilot...

*"Takeoff checklist"*

Your Co-Pilot will ask you...

*"Do you want me to assist you?"*

You respond with...

*"Affirmative", or, "Yes please"*

Your Co-Pilot will then ask...

*"Would you like me to maintain an optimized air speed throughout the flight?"*

You respond with...

*"Negative", or, "No thanks"*

Once lined up on the centre line, you can simply apply takeoff power, or ask your Co-Pilot to...

*"Apply Takeoff Thrust"*

Your Co-Pilot will call out 80 knots, V1, Vr and V2 rates. You rotate the aircraft at the appropriate time. Your Co-Pilot will then perform all other climb out functions, such as retracting the landing gear, operating the flaps, engaging the autopilot, etc.

### **Takeoff With Checklist – Co-Pilot Assisted – With Optimized Airspeed**

Before takeoff, you say to your Co-Pilot...

*"Takeoff checklist"*

Your Co-Pilot will ask you...

*"Do you want me to assist you?"*

You respond with...

*"Affirmative", or, "Yes please"*

Your Co-Pilot will then ask...

*"Would you like me to maintain an optimized air speed throughout the flight?"*

You respond with...

*"Affirmative", or, "Yes please"*

**NOTE:** The optimized airspeed functionality only takes effect after climbing above 10,000 feet as explained later.

Once lined up on the centre line, you can simply apply takeoff power, or ask your Co-Pilot to...

*"Apply Takeoff Thrust"*

Your Co-Pilot will call out 80 knots, V1, Vr and V2 rates. You rotate the aircraft at the appropriate time. Your Co-Pilot will then perform all other climb out functions, such as retracting the landing gear, operating the flaps, engaging the autopilot, etc.

### **Co-Pilot Performs Takeoff With Checklists – No Optimized Airspeed**

Before takeoff, you say to your Co-Pilot...

*"Takeoff checklist"*

Your Co-Pilot will ask you...

*"Do you want me to assist you?"*

You respond with...

*"Affirmative", or, "Yes please"*

Your Co-Pilot will then ask...

*"Would you like me to maintain an optimized air speed throughout the flight?"*

You respond with...

*"Negative", or, "No thanks"*

Once lined up on the centre line, you can simply apply takeoff power, or ask your Co-Pilot to...

*"Apply Takeoff Thrust"*

Your Co-Pilot will call out 80 knots, V1, Vr and V2 rates. He/she will rotate the aircraft at the appropriate time and will then perform all other climb out functions, such as retracting the landing gear, operating the flaps, engaging the autopilot, etc.

**NOTE:** In this Non-Optimized Airspeed mode, after the aircraft climbs above 10,000 feet, the airspeed and vertical rate of climb will remain unchanged. e.g., in the case of the B738, the airspeed will remain at 250 knots, and the vertical rate of climb will remain at 1,800 feet per minute.

At this point, you can assign your desired airspeed by saying (e.g.) ...

*"Airspeed 310"*

You can also set the desired vertical rate of climb by saying (e.g.) ...

*"Set the vertical rate of climb to 2,000"*

**NOTE:** You can ask your Co-Pilot to maintain an Optimized Airspeed mode by saying...

*"I'd like you to control the speed"*

**IMPORTANT NOTE:** If your Co-Pilot is maintaining an Optimized Airspeed and you say (for example)...

*"Set the vertical rate of climb to 2,000", or...*

*"Airspeed 320"*

he/she will perform the setting, then immediately respond with...

*"Captain, I am no longer controlling the airspeed"*

If you think about this, it makes absolute sense. Unless your Co-Pilot can control BOTH the airspeed and the vertical rate of climb, he/she cannot control the airspeed.

### **Co-Pilot Performs Takeoff With Checklists – With Optimized Airspeed**

Before takeoff, you say to your Co-Pilot...

*"Takeoff checklist"*

Your Co-Pilot will ask you...

*"Do you want me to assist you?"*

You respond with...

*"Affirmative", or, "Yes please"*

Your Co-Pilot will then ask...

*"Would you like me to maintain an optimized air speed throughout the flight?"*

You respond with...

*"Affirmative", or, "Yes please"*

**NOTE:** The optimized airspeed functionality only takes effect after climbing above 10,000 feet as explained later.

Once lined up on the centre line, you say to your Co-Pilot ...

*"I'd like you to perform the takeoff"*

Your Co-Pilot will call out 80 knots, V1, Vr and V2 rates. He/she will rotate the aircraft at the appropriate time and will then perform all other climb out functions, such as retracting the landing gear, operating the flaps, engaging the autopilot, etc.

**NOTE:** Our Blind and Visually Impaired (BVI) pilots should always use the "Co-Pilot Performs Takeoff With Checklists – With Optimized Airspeed" procedure described above.

## Noise Abatement

This is best demonstrated by viewing the following IYP Video in which Co-pilot Mike performs a B744 Noise Abatement Takeoff:

<http://www.youtube.com/watch?v=2c9ZBuVJ1I8>

## What Happens Above 10,000 Feet?

### Overview:

Let's consider what's involved in programming the Flight Management Computer (FMC) of the Boeing 737-800. Here are the basic building blocks of the overall system. The Automatic Flight System (AFS) of the B738, consists of the Autopilot Flight Director System (AFDS) and the Auto-throttle (A/T) system. The aircraft's FMC provides N1 limits and Target N1 for the A/T and AFDS. The AFDS and A/T are operated from the AFDS Mode Control Panel (MCP) and the FMC from the Control Display Unit (CDU) or Multifunction Control Display Unit (MCDU). The AFDS MCP provides coordinated control of the Autopilot (A/P), Flight Director (F/D), A/T and altitude alert functions. AFS mode status is displayed on the Flight Mode Annunciators (FMA) on each pilot's ADI classical display, or on the NG series Primary Flight Display (PFD). Normally, the AFDS and A/T are used to maintain airspeed and/or thrust settings, calculated by the FMC.



**QUESTION:** What do you do if your aircraft does not have an FMC, or you're a Blind or Visually Impaired (BVI) pilot who cannot readily programme an FMC?

**ANSWER:** Let your Co-Pilot compute the real-time information and fly the aircraft!

### Principal Objective:

Given the ever-rising cost of fuel these days, the principal objective of all airlines is to CONSERVE FUEL! The best way to do this is to get the aircraft up to its Top Of Climb (TOC) altitude as quickly as possible, where the fuel consumption is the lowest due to the thinner air. However, you don't want to simply apply maximum thrust all the way up to TOC, or the aircraft will be spending an excessive amount of time in the maintenance hangar having the engines reworked. Thus, the optimal climb out has the aircraft obtaining TOC as quickly as possible, without over-stressing the engines.

### IAS and Vertical Rate of Climb:

After the aircraft climbs above 10,000 feet, your trusty Co-Pilot begins performing a complex balancing act! Let's use the B738 as an example. Just above 10,000 feet, you'll notice that your Co-Pilot will begin to slightly decrease the vertical rate of climb as he/she begins increasing the indicated airspeed (IAS). When the aircraft's IAS exceeds 270-275 knots, your Co-Pilot will then begin to gradually increase the vertical rate of climb, and depending upon the aircraft's gross weight, may increase it to a maximum of 2,800 feet per minute. During this climb out period, as the air gets thinner, your Co-Pilot will continue increasing the IAS as well.

### Monitoring N1 Percentage:

Your Co-Pilot will be constantly monitoring the engines' N1 percentage and if it exceeds 90%, then he/she will start decreasing the vertical rate of climb in order to reduce demand on the engines.



### Approaching Maximum Speed:

Your Co-Pilot also keeps an eye on the aircraft's speed, with the objective of not exceeding a speed of approximately 5.5% BELOW the (Vmo/Mmo). Why 5.5% below Vmo/Mmo? There are two main reasons. First, according to Boeing specifications, this will yield the optimum fuel efficiency. Second, this helps to ensure that a sudden tailwind will not throw the aircraft into an OVER SPEED state.



### Over Speed:

Even though your Co-Pilot is guarding against the occurrence of a sudden over speed condition, when it happens occasionally, he/she automatically deploys the spoilers (speed brakes) to 25% and quickly reduces the IAS. Once aircraft stability is attained, your Co-Pilot gradually returns the aircraft to its nominal cruise conditions.

### Descending:

If you have filed a flight plan, and you are using the Microsoft ATC system, then an en-route ATC controller will tell you when to start your descent into the destination airport. If you're using Live ATC (Vatsim, IVAO, etc) and there happens to be no controller on duty, Michelle will tell you when you should start your descent.

**NOTE:** For a detailed discussion on this subject matter, refer to the section above entitled...

### Starting Your Descent and Calculating Your Descent Rate

Whether you and your Co-Pilot conduct the Descent checklist or not (although we strongly suggest that you do), he/she will perform the following procedures during the descent phase.

- Reduce the IAS to approximately 18% below the V<sub>mo</sub>/M<sub>mo</sub> when you say, *"Descend and maintain...."* a certain altitude/flight level.
- Recommend that you conduct the Descent checklist.
- Automatically calculate the optimum rate of descent based upon the aircraft's current airspeed and distance to the destination airport.
- Reduce the IAS to 250 knots below 15,000 feet.
- Set the vertical rate of descent to the aircraft's default rate below 15,000 feet.
- Reduce the IAS to 240 knots below 13,000 feet.
- Release control of the airspeed when entering the Class B airspace, generally calculated to be within 30 miles of the destination airport. After the aforementioned release, you have complete control of all aspects of flight and can alter the airspeed based upon Live ATC directives.
- Suggest the best time to conduct the Approach checklist when approaching Final.

## General Information

- All of the foregoing information is only applicable to IYP Supported Aircraft. Please refer to the Support Aircraft section of the IYP web site for details.
- Not all of the functionality described above can be performed by all Supported Aircraft. Please refer to the AT (Auto-Takeoff) and AL (Auto-Landing) columns for the particular aircraft being operated.
- If during the execution of the Approach checklist you ask your Co-Pilot to assist you, he/she will take control of the aircraft's airspeed.

## **IYP VERSION 5 (IYP-5) POLICY CHANGE ANNOUNCEMENT**

Early in the New Year 2014 we will be releasing IYP-5 and adopting the following business operations policy:

- IYP-5 can be used in the Online or Offline modes.
- IYP-4 will cease to operate Online upon the release of IYP-5. You will be able to continue using IYP-4 Offline however it will no longer be supported.
- Online Minutes - We have become victims of our own success! As our Registered Users have increase in numbers (which is great), our customer service and server expenses have increased commensurately. After much consideration our tired brains have realized that the only way to continue to give the full service that our customers have become used to is to charge a minimal rate for Online Minutes with the release of IYP-5. Please read below for details.

### **How Will This Affect You?**

#### **Registered Users**

Every existing registered user will be able to upgrade to IYP-5 at no cost and upon the official release of IYP-5 will be automatically issued 4,000 (four thousand) Online Minutes. Thereafter, you will be able to purchase additional Minutes whenever you need them.

#### **Donors Prior to the Release of IYP-5**

In addition to the Registered Users benefits listed above, you will be issued an additional 4,000 (four thousand) Online Minutes, with our deepest thanks for your support. After using all the minutes, you will be able to purchase a minimum of \$20.00 of additional online minutes whenever you need them.

#### **Flying Around the World?**

Since Fly Around the World consumes a considerable number of online minutes, we will be releasing a stand-alone package, in the near term, that can be flown Offline.

#### **IYP-5 Online Minutes:**

- Until now, the IYP online features and personal assistance from Robert Cezar has been free, but necessity has reared its virtual head and we need to begin charging a small amount for Online Minutes used.
- The purchase of Online minutes gives you full access to all IYP online and offline features, Robert Cezar's personal customer support and all updates.
- Before your Minutes run out there will be various options available for purchasing more Online Minutes.

**Purchasing IYP:**

The purchase price of the Standard and Super Editions of IYP remain the same but with the addition of Online Minutes.

- It's Your Plane Version 5 – Standard Edition for FS9/FSX: \$59.95 CAD with 4,000 free Online Minutes
- It's Your Plane Version 5 – Premium Edition for FS9/FSX/P3D: \$79.95 CAD with 4,000 free Online Minutes
- Additional Online Minutes - 4,000 minimum: \$20.00 CAD

**IYP-5 Offline:**

Those of you who prefer to use IYP-5 in the Offline mode, will still have access to the IYP Users' Manuals and IYP Flight Deck Doc, and the IYP General Forum. If you require personal customer assistance or wish to download IYP upgrades, you will need to switch to the Online Mode and either use your free Minutes or purchase additional Online Minutes.